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ANTHRAX IN ANIMAL (HORSE) HAIR

THE MODERN INDUSTRIAL AND PUBLIC HEALTH MENACE

S. DANA HUBBARD, M.D.

Superintendent, Division of Industrial Hygiene, New York City Department of Health

NEW YORK

During the World War it was found that shaving brushes manufactured of horsehair contained the germs (spores) of a most fatal disease, and through this source a number of persons were inoculated with anthrax. This led to a careful investigation by the department of health of the animal hair used in brush manufacture. It was found in frequent instances, particularly with horsehair that had been imported, that hair cloth, hair braid and various kinds of brushes, especially toilet brushes (in the majority of instances shaving brushes) made from this material, were contaminated with dirt containing the spores of anthrax.

In New York City in the last seventeen months there have been reported to the division of industrial hygiene of the department of health thirty-four cases of human anthrax, of which eleven have been fatal. The accompanying table indicates the sources of danger from this disease. The table presents in chronological order the thirty-four cases of anthrax occurring in New York City during 1919 and 1920, a period of one year and five months, and shows briefly the name, age, sex, date of occurrence, source of infection and result.

A campaign of education of those who are engaged in the manufacture of brushes, particularly those using horsehair, was undertaken in order to secure general cooperation in an endeavor to annihilate this modern industrial and public health menace at its source. It was little appreciated how dangerous it is to handle horsehair, as workmen who had been at a trade for long periods and not experiencing such results were loath to believe that there could be danger. The appearance of case after case brought this fact home to employer and employee, as well as to the public health officials. After a careful study of this matter, the New York City Department of Health adopted the subjoined statute:

At a meeting of the Board of Health of the Department of Health of the City of New York, held in the said city on the 16th day of June, 1920, the following resolution was adopted:

SPECIAL REGULATIONS

Resolved, That Article 12 of the Sanitary Code be amended by adding thereto a new section to be known as Section 230 and to read as follows:

Sec. 230. *The manufacture and sale of hair brushes and hair cloth.*—No person shall use in the manufacture of brushes or cloth, any animal hair which has not been sterilized by a process prescribed or approved by the Board of Health nor shall any person bring into, or offer for sale, sell, or deliver in the City of New York, any brush or cloth containing animal hair unless the same shall have been so sterilized.

It shall be the duty of the manufacturer of shaving brushes, tooth brushes, hair brushes, nail brushes, or other toilet brushes intended for human use, to cause his name or trade mark, the place of manufacture, and the word STERILIZED to be permanently, clearly and legibly painted or branded upon every such brush before offering for sale, selling, or delivering the same in the City of New York. Provided, however, the word STERILIZED shall not be painted or branded upon any such brush unless the animal hair used in the manufacture thereof shall have been sterilized by a process prescribed or approved by the Board of Health.

No person shall sell, offer for sale, or deliver, or have in his possession with intent to sell, offer for sale, or deliver in the City of New York, any shaving brush, tooth brush, hair brush, nail brush, or other toilet brush intended for human use, containing animal hair, unless the name or trade mark of the manufacturer, place of manufacture, and the word STERILIZED are permanently, clearly and legibly painted or branded thereon.

The provisions of this section shall take effect the 1st day of July, 1920, but shall not apply to brushes in stock on the 16th day of June, 1920, in the hands of dealers which have not been labeled or branded, as hereinbefore required.

WHEREAS, This board has adopted Section 230 of the Sanitary Code relating to the manufacture and sale of hair brushes and hair cloth and the protection of the public against anthrax; and

WHEREAS, The provisions of said section require all hair used in the manufacture of brushes and cloth to be sterilized by a process prescribed or approved by this board; and

WHEREAS, An investigation conducted by the Department of Health indicates that so far as can be ascertained at this time only two processes have been found to be effective and adequate to properly sterilize such hair and to render the same free from anthrax bacteria and spores; and

WHEREAS, The two processes referred to are as follows, to wit:

1. Boiling the hair in water maintained at a temperature of 212 F. for a period of at least three hours.
2. The placing of the hair in an autoclave in which a 10-inch vacuum is produced. Live steam to be then turned on and kept at 15 pounds pressure for a period of three hours; be it therefore

Resolved, That the following processes for the sterilization of hair to be used in the manufacture of brushes or cloth and relating to the provisions of Section 230 of the Sanitary Code, be and the same are hereby approved, to wit:

1. Boiling the hair in water maintained at a temperature of 212 F. for a period of at least three hours.
2. The placing of the hair in an autoclave in which a 10-inch vacuum is produced. Live steam to be then turned on and kept at 15 pounds pressure for a period of three hours.

It was anticipated that a regulation of this character, if not understood by those interested, would materially injure the brush trade which, owing to general labor unrest and upward tendency of prices, was having its own share of trouble. Regulations were drawn and placed in effect after a conference with brush manufacturers, and a number of visits were made to factories and special talks given to the workmen in these establishments; in addition, literature was printed and was disseminated in channels that would reassure, while informing without causing confusion.

A visit was made to several of the brush men's conferences (Troy and Northampton), and correspondence was held with neighboring states similarly interested in this unpleasant condition. The regulation was given publicity through the newspapers, each case of human anthrax as it appeared being specially featured. This public health feature of the work was well received, and aid was given freely by all concerned, even by

those hard-headed, experienced workmen who are at times so persistent in continuing a practice simply from habit, and who will not change or alter their methods until imminent dangers squarely placed before them make them alter their usual methods.

NATURE OF ANTHRAX

Primarily, anthrax is an animal disease, frequently transmitted to man, not in the sense that the animal is the host, but that the animal is its victim, from which by accident man receives the infection. Naturally, then, the source of anthrax in man is most often looked for in the products of the animal—in hides, wool or hair. Anthrax is widespread, affecting cattle, sheep and horses most often, and less frequently men. We are informed that all herbivora are liable to anthrax, but that carnivora enjoy relative immunity. Domestic animals, cats, dogs and pigs often fall victims to anthrax, probably from their intimate contact with the soil or from eating infected meat. Experiments in the laboratory demonstrate that rabbits, mice and guinea-pigs are peculiarly susceptible to anthrax.

Anthrax in medical history is an ancient affair, and from the earliest times has been considered a scourge to both men and beasts. Today anthrax is being disseminated through a source but little suspected by the general public and especially by the medical profession. Brushes used in toilet and domestic use, as well as hair cloth and hair braid, have recently in New York City caused a number of cases of this disease.

SOURCE OF INFECTION

Originally, anthrax was probably telluric; but, rising to the surface, it infected pasture lands and through grazing, was taken up by animals and disseminated. Lands rich in organic matter seem best suited for the growth of anthrax. Fields may be contaminated through hay or seed from infected areas or from carcasses of animals not deeply buried, the ground water probably carrying the organisms of anthrax to the surface. According to Kitasato, sporulation in the ground is incomplete at from 18 to 20 inches beneath the surface of the soil.

Anthrax in an infected animal may be disseminated through the urine, feces and other body discharges. Arntz found anthrax organisms in the saliva of an infected horse, and others have found the organisms in cow's milk. Anthrax may be disseminated in the excrement of carrion birds, which may contain anthrax spores. Sucking insects, especially flies, may similarly disseminate the disease.

No doubt the greatest danger from anthrax lurks in hides; and in this particular industry the menace is well known and guarded against, as evidenced by the fact that millions make or wear gloves, shoes and articles from hides, such as traveling bags, but comparatively few contract anthrax. In both American and English investigations, no infection has been reported among the thousands of workers in the glove and shoe industries.

A recent menace, which about a year and a half ago attracted our attention, was the dissemination of anthrax through the handling or use of brushes and cloth made of horsehair. The cheap horsehair shaving brush has been the principal offender in this regard, but other brushes with contaminated hair have occasioned a number of cases, and a new horsehair brush of any kind used for toilet purposes should be sterilized carefully before it is used.

Direct contact with the infected animal is not essential, as infection may occur through dirt or dust contaminated with the anthrax spore or germ.

Manufacturers of hog bristle brushes are of the opinion that hog bristles rarely, if ever, disseminate anthrax. This may be true, as the method of collecting, treating and preparing hog bristles for toilet brushes probably removes this contamination; but the material so removed, unless sterilized, may be the means of seeding places for the future infection of either man or beast.

Every object to which anthrax spores can be attached becomes a source of danger and is liable to cause the spread of this disease at any time; therefore it is most essential that this menace should be known and anticipated by all.

METHOD OF PREVENTION

Animal hair is usually purchased by weight, and in the original packages imported there is considerable foreign material—dirt. This may be the means of disseminating the disease unless the dirt is destroyed when the hair is taken from the container and the container sterilized or destroyed by fire.

Shaving brushes made of horsehair or a mixture containing horsehair have caused eighteen of the thirty-four cases, with nine fatalities—a mortality of 50 per cent. There was laboratory confirmation in every instance.

Numerous samples of horsehair and brushes made of horsehair—especially shaving brushes made of horsehair—have been tested and have been found in 80 per cent. of the cases to be positively contaminated with the spores of anthrax. This indicates conclusively that horsehair used in brush manufacture, especially shaving brushes unsterilized or improperly sterilized, is a positive menace.

In our experience the use of a new shaving brush, made of horsehair or a mixture containing horsehair, in the home or in the public barber shop, is a matter calling for prompt and drastic action by our public health authorities. Suggestion has been made that all shaving brushes made of horsehair should be excluded from sale and their future manufacture interdicted, and that horsehair used in making other brushes should in every such instance be carefully sterilized. Exclusion of such contaminated material from commerce is difficult or impossible. Furthermore, such exclusion does not solve the problem but simply passes it over to others elsewhere who, uninformed or ignorant, would be unnecessarily exposed. Anthrax spores resist all the ordinary disinfectants. They have been found active after passing through tanning and bleaching solutions. This gives rise to a grave public health menace. Seymour-Jones uses mercuric chlorid, 1:2,500, with 1 per cent. formic acid. Van Schattenfroh suggests forty-eight hours' exposure to 2 per cent. hydrochloric acid with 10 per cent. sodium chlorid. Our laboratory informs us that these measures will destroy spores; but until they are proved by extensive use, they cannot be pronounced absolutely safe.

Anthrax prevention is a matter of cleanliness. Prophylaxis is therefore the keynote of success. Manufacturers should know that the animal product entering into their goods must be cleaned and that the material removed from the hide, hoof or hair (wool) must be sterilized in order to prevent contaminating nearby grounds and, through contamination of insects, as the fly and the mosquito, pass the disease on to man.

Any object coming into contact with the spores may cause the disease. As one writer tersely puts it, "Against an enemy so tenacious and so destructive, the united efforts of all should be directed to prevent its dissemination." We are concerned chiefly with the protection of the industrial worker and the citizen using these manufactured products. The eradication of anthrax involves difficulties that are practically insurmountable. Our efforts must therefore be assiduous and ceaseless. The chief means are education, supervision and regulation. Departments of health can do much and will be greatly aided in their efforts if the public will heed the advice given.

OCCURRENCE OF ANTHRAX

Age	Sex*	Date of Occurrence	Source of Infection	Result
59	♂	2/19	Shaving brush	Died
20	♂	3/19	Shaving brush	Died
57	♂	3/19	Brushes during manufacturing	Died
46	♂	4/19	Shaving brush	Died
45	♂	7/19	Shaving brush	Died
18	♂	8/19	Hair brush	Recovered
47	♂	10/19	Shaving brush	Recovered
34	♂	11/19	Shaving brush	Died
59	♂	11/19	Shaving brush	Died
21	♀	11/19	Hair during manufacture of shaving brushes	Recovered
24	♂	11/19	Hides	Recovered
45	♂	12/19	Shaving brush	Died
29	♂	12/19	Hides	Recovered
43	♂	12/19	Hides	Died
32	♂	1/20	Hides	Recovered
18	♂	1/20	Shaving brush	Died
68	♂	1/20	Hides	Recovered
16	♀	1/20	Table dust brush	Recovered
63	♂	2/20	Brush during manufacturing	Recovered
31	♂	3/20	Shaving brush	Recovered
27	♂	3/20	Shaving brush	Recovered
45	♂	3/20	Hides	Recovered
18	♂	3/20	Hides	Recovered
23	♂	3/20	Shaving brush	Recovered
48	♂	4/20	Hides	Recovered
36	♀	3/20	Hair cloth and braid during making of hats	Recovered
15	♂	6/20	Making brushes from horse hair in school	Recovered
24	♂	7/20	Shaving brush	Recovered
37	♂	7/20	Shaving brush	Recovered
42	♂	8/20	Shaving brush	Died
44	♂	8/20	Not determined	Recovered
16	♂	8/20	Shaving brush	Recovered
14	♂	9/20	Bite of insect ?	Recovered
46	♂	9/20	Shaving brush	Recovered

RECAPITULATION

Sources of Infection	Died	Recovered	Total
From use of shaving brush	9	9	18
From manufacture of shaving brush	1	2	3
From using animal hair	0	1	1
From handling hides†	1	7	8
From use of table dusting brush (new)	0	1	1
From manufacture of women's hats (hair cloth and hair braid	0	1	1
From manufacturing hair brushes	0	1	1
From unknown cause (mosquito?)	0	1	1
Aggregate	11	23	34

* In this column, male is indicated by ♂, and female by ♀.
† As there are no tanneries in New York City, we exclude these from our consideration.

In the industries, especially where animal products are handled, a realization of this menace should be prominent in the minds of the medical and lay staff. The necessity for prompt treatment was never more imperative. In every shop where materials liable to carry infection are handled, the workers should be examined at stated intervals. Every skin disturbance particularly should be promptly reported and examined and, if possible, laboratory confirmation should be secured. Facilities for early diagnosis and early treatment must be provided.

In the prevention of anthrax, nothing is more important than to have the workmen provided with and made to use proper appliances, as gloves, face masks and overalls, which should be cleaned after use. There should be mandatory regulations for the purpose of forcing employers to furnish, and workmen to use, these protective devices. Recalcitrants should be heavily disciplined.

Physicians should be on the alert when called to attend any workman whose occupation has to do in any way with animal products, especially animal hair, and whose disease may be anthrax, and should promptly report these cases, as required by law. The earlier the diagnosis, the greater the opportunity for success in saving the life of the patient and the prevention of the dissemination of the disease to others. One fact that is of interest is the failure on the part of physicians to recognize the disease. None of our thirty-four cases were detected by the family physician. The actual condition was not recognized until the patient was removed to a hospital or until the laboratory reported after the patient's death.

RECOMMENDATIONS BY NEW YORK STATE DEPARTMENT OF LABOR

The New York State Department of Labor, which handles this matter in New York State, has offered these recommendations regarding anthrax:

(*a*) Every physician should report every case of anthrax to the state industrial commission.

(*b*) In every establishment where articles are liable to be infected with anthrax, a competent physician should be employed.

(*c*) Special provision should be made for the protection of employees.

(*d*) Every employee should be required to make use of these preventive means. It should be the duty of the foreman to enforce the use of such by employees.

(*e*) Cooperation with federal, state and municipal officials should be maintained, and all in any way connected with material liable to be contaminated must be made aware of the menace.

RULES FOR EMPLOYEES

Every employee should be informed of the danger of anthrax and the necessity of avoiding infection.

Employees should wear protective clothing and use dressing rooms, wash rooms and lunch rooms according to hygienic rules regarding cleanliness.

No food should be taken into the work rooms and no food taken until the workman has washed up and changed to other clothing.

All slight injuries, as well as severe hurts, should be promptly attended by a physician. The advice of the physician should be followed and the case observed for at least four days, laboratory tests being made early for confirmation.

Every one, employer, employee and the public generally, should cooperate in enforcing the regulations regarding the prevention of this very fatal disease.

GENERAL RULES FOR THE PREVENTION OF ANTHRAX

In factories, warehouses and places where horsehair is handled or stored, the floors should be made of cement or so waterproofed as to be easily washed and kept clean. The walls should be whitewashed. Should a case of anthrax appear, the floor should be cleaned, the scrubbing being done under expert supervision, and the washings sterilized by boiling or burning. The tables, work benches and boxes coming in contact with infected materials should be washed as often as necessary with a disinfecting solution, hot sal soda or hot cresol.

Dressing rooms, wash rooms and lunch rooms should be provided for employees. The dressing room should have individual lockers so that the worker may keep his street clothes separate from this contamination. The overalls should be furnished and washed after use. The wash room should be furnished with hot and cold water, soap, individual towels and individual drinking cups or a small stream fountain.

No food should be allowed in the work room.

Where dust is evolved, special ventilating devices are essential and baffling masks should be worn by the employee. A simple mask which is inexpensive is a thin layer of cotton with one or two layers of cheesecloth on each side, and tapes from each corner of the square mask tied about the neck, one above the ears and the other below. After use, these should be burned.

Publicity given through posters in different languages, with the disease itself pictured, preferably in colors, should be posted throughout all places where these animal products are handled, from the pier to the workshop, warnings of the dangers and methods of avoiding infection as well as the public regulations being made a conspicuous part of this poster.

The employer should be held responsible for the observance of regulations to prevent anthrax in his warehouse or shop.

CONCLUSION

Might it not be well to stop the sale or importation of horsehair shaving brushes, and require all brush makers using horsehair to sterilize it before using?

RELATION OF CONTACT WITH TUBERCLE BACILLUS TO DEVELOPMENT OF TUBERCULOSIS IN ADULTS *

J. B. ROGERS, M.D.
CINCINNATI

By previous study, I [1] have found that dust containing bed lint collected from the wards, and from window sills and specimen jars from the mortuary where necropsies on tuberculous patients are performed on the average of one every day, contained living tubercle bacilli; also that guinea-pigs placed in sterile cages and kept in the mortuary contracted pulmonary tuberculosis.

The present report of investigation consists of further studies along these lines. These were carried on in order to determine to what extent the tubercle bacilli are scattered around a sanatorium caring for a large number of advanced cases of pulmonary tuberculosis, and to what degree physicians, nurses and other attendants come in contact with the micro-organism. Since this work has been in progress, the researches of Brown, Petroff and Pesquera [2] and of Cumming [3] have given us valuable information on this subject, and the work that I report is in part a repetition of that recently published by these observers. I feel, however, that concerning a subject so important, certain confirmatory observations may not be out of place.

In each of the experiments reported here, the reproduction of the disease in a guinea-pig has been the deciding factor; sixty pigs in all were used. The patients tested were either moderately or far advanced, positive sputum cases of tuberculosis. The objects and conditions studied comprised: droplets from coughing patients; saliva; gauze used by coughing patients to cover the mouth; pillow cases; and the infectiousness of patients' hands, urine and eating utensils, and of magazine covers and door-knobs frequently used by patients.

RESULTS OF EXPERIMENTS

Droplets from Coughing Patients.—I held sterile Petri dishes 15 inches from the mouth of patients, who were instructed to cough from twelve to fifteen times. The dishes were then closed, protected from light and carried to the laboratory, where they were washed with 5 c.c. of sterile physiologic sodium chlorid solution, and the entire solution was injected subcutaneously into the left groin of guinea-pigs. For each of the ten patients tested, one guinea-pig was injected, May 1, 1919. Seven pigs, August 6, were found at necropsy to be negative for tuberculosis. September 1, the remaining three pigs, which in the meantime had developed symptoms of the disease, were also found at necropsy to have generalized tuberculosis. March 26, 1920, the experiment was repeated with slight changes. The Petri dishes were held 6 inches from the mouth of four patients, and four pigs were injected intraperitoneally. One pig was killed, May 17, and found to have peritoneal tuberculosis. Two pigs died, May 6, and at necropsy showed tuberculosis of the lungs liver, spleen and peritoneum. One pig was killed, June 26, and found to be entirely negative for tuberculosis.

Saliva.—To test the infectiousness of saliva, the saliva from five patients was collected in separate sterile Petri dishes and injected into five pigs, Dec. 31, 1919. Two of these pigs were killed, Feb. 2, 1920, and showed generalized tuberculosis; examination of the remaining three, killed, February 28, showed one to be negative and the other two to have generalized tuberculosis.

Gauze Used by Patients to Cover the Mouth when Coughing.—Two pieces of gauze thus used were washed in sterile salt solution and the emulsion injected into two guinea-pigs, one subcutaneously and the other intraperitoneally, April 1, 1920. The subcutaneously injected animal died twelve days later, with the inguinal gland on the injected side in a condition of suppuration. A slide prepared from the pus from the gland showed the presence of tubercle bacilli. The other pig was killed, April 27, and found to have tuberculosis of the mesentery, spleen, liver and bronchial glands.

Pillow Cases.—The pillow slips that had been used twenty-four hours by bed patients were washed in sterile salt solution. The wash water was centrifugalized and the sediment injected intraperitoneally into four pigs, March 26, 1920, one animal being used for each pillow case. The pigs were killed and examined with these results: April 27, one pig, negative; April 29, one pig, generalized tuberculosis; May 7, one pig, peritoneal and splenic tuberculosis, and May 12, one pig, negative.

Infectiousness of Patients' Hands.—Under my direction, five patients were instructed to rinse their hands with sterile salt solution into sterile Petri dishes. One guinea-pig was injected, Jan. 6, 1920, with 10 c.c. of the wash water for each of the five patients. One pig died the following day, another, February 28, and one, March 16, all three being negative for tuberculosis. Necropsies performed on the remaining two, March 6 and March 14, respectively, disclosed generalized tuberculosis.

Urine.—In order to test whether or not virulent tubercle bacilli are excreted in the urine in moderately and far advanced cases of tuberculosis, urine was collected in sterile receptacles from ten male patients (all negative for genito-urinary tuberculosis), and 50 c.c. of each specimen centrifugalized for thirty minutes at high speed. A small amount of the sediment was then injected into the left groin of a guinea-pig, one pig for each patient, Oct. 18, 1919. Eight of the ten animals were killed, December 30, and examined for tuberculosis, but found to be negative; one, killed, November 25, and one, November 29, also was negative. The experiment was repeated, Dec. 3, 1919, with ten guinea-pigs. Two were killed, December 28; two, Jan. 3, 1920; one, January 8; three, January 15; one, January 22, and one, February 8. These were all uniformly negative for tuberculosis.

Eating Utensils.—Spoons that had been used by patients (open cases of tuberculosis) were collected immediately after a meal and washed with 1 per cent. sodium hydroxid. The wash water was then neutralized with half normal hydrochloric acid and centrifugalized. The sediment was

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* From the Percy Shields Memorial Research Laboratory, Cincinnati Tuberculosis Sanatorium and Department of Bacteriology, University of Cincinnati College of Medicine.

1. Rogers, J. B.: Studies on the Viability of the Tubercle Bacillus, Am. J. Pub. Health **10**: 345 (April) 1920.
2. Brown, Petroff and Pesquera: Etiological Studies in Tuberculosis, Am. Rev. Tuberc. **3**: 621 (Dec.) 1919.
3. Cumming, J. G.: Can the Tuberculosis Transmission Rate Be Reduced? J. A. M. A. **74**: 1072 (April 17) 1920.

washed with sterile physiologic sodium chlorid solution and injected into four guinea-pigs intraperitoneally, June 1, 1920. One pig died, July 15, and was found to be negative for tuberculosis. One died, July 27, and showed tuberculosis of the lungs, mesentery and tracheobronchial glands. Two pigs were killed, July 31; one showed tuberculosis of the omentum, liver and lungs, and enlargement of the tracheobronchial glands; the other, tuberculosis of the liver and omentum, with slight enlargement of the tracheobronchial glands.

Magazine Covers.—Magazine covers, very much soiled from use, were collected from the open wards and washed with 1 per cent. sodium hydroxid. After fifteen minutes the wash water was neutralized with half normal hydrochloric acid and centrifugalized. The sediment was injected intraperitoneally into three guinea-pigs, May 31. One pig was killed accidentally the following day. Two pigs were killed, July 31; one showed tuberculosis of the liver, omentum and spleen, with a very slight enlargement of the tracheobronchial glands; the other, tuberculosis of the lungs, spleen, liver and tracheobronchial glands.

Door-Knobs.—In order to test whether an object much handled by patients with open tuberculosis becomes contaminated, the door-knob on the door leading into the patients' dining room was washed with sterile sodium chlorid solution and the wash water collected into a sterile beaker. (The knob is handled by approximately 100 patients every day.) The washings were centrifugalized at high speed for several minutes, and the sediment was injected intraperitoneally into three guinea-pigs, April 12, 1920. One pig died, April 29, and one, May 5. Necropsies on these failed to reveal any evidence of tuberculous infection. One died, April 30, and showed numerous miliary tubercles in the omentum.

COMMENTARY

As a result of our experiments, we have found that such objects as gauze used to cover the mouth when coughing, pillow cases used twenty-four hours, patients' hands, spoons used by patients, magazine covers picked up indiscriminately from the wards, and door-knobs frequently handled by patients are contaminated with living, virulent tubercle bacilli.

Patients with open tuberculosis frequently emit infectious particles when coughing. If these particles are collected 15 inches from the mouth of the patients, 35 per cent. of a group of guinea-pigs can be infected; if collected at a distance of 6 inches, the percentage increases to 75 per cent. Such particles, no doubt, are inhaled by persons in close proximity to the patients.

The saliva in open cases of tuberculosis usually contains living tubercle bacilli.

The sedimented urine in twenty open pulmonary tuberculosis cases negative for genito-urinary tuberculosis failed to infect any of the twenty inoculated guinea-pigs.

Physicians, nurses and other attendants caring for patients with open tuberculosis in institutions are constantly associated with the virus of tuberculosis; from reliable statistics, however, as shown by the studies of Ravenel,[4] Pottenger[5] and Fishberg,[6] we know that they do not develop the disease more than the population at large. In either case the necropsy findings by Opie,[7] Adami[8] and Naegeli[8] show that tubercle bacillus infections are virtually universal, while, on the other hand, only approximately less than 3 per cent. of the people develop clinical tuberculosis. Out of 240 nurses employed at the Cincinnati Tuberculosis Sanatorium, only three developed tuberculosis, and one diagnosed as tuberculous after working at the sanatorium for two years gave a history of previous infection. In fact, many nurses who come here as closed cases of tuberculosis seem to improve under the sanatorium regimen. These statistics were taken from a period covering seven years.

4. Ravenel, M. P.: Present Views in Respect to Modes and Periods of Infection in Tuberculosis, J. A. M. A. **66**: 613 (Feb. 26) 1916.
5. Pottenger, F. M.: Clinical Tuberculosis, St. Louis, C. V. Mosby Company, **2**: 519, 1917.
6. Fishberg, Maurice: Pulmonary Tuberculosis, Philadelphia, Lea & Febiger, 1916, p. 109.
7. Opie, E. L.: The Focal Pulmonary Tuberculosis of Children and Adults, J. Exper. Med. **25**: 855 (June) 1917.
8. Cited by Fishberg (Footnote 6), p. 54.

CONCLUSIONS

Aside from the mere presence of the organism in the body, other factors are necessary for the development of clinical tuberculosis. What the factors are has not as yet been clearly shown. In all probability there must be a lowering of the individual resistive power; whether this is congenital or acquired, whether purely local or constitutional, resulting from pathologic states or physical abnormalities, is still a question.

At all events, we may safely assume that the elimination of clinical tuberculosis from adults will largely depend on the establishment of such living conditions as will keep up to normal those powers of individual resistance.

TUBERCULOUS MENINGITIS

GEORGE FRANKLIN LIBBY, M.D., OPH.D.
DENVER

For the early recognition of tuberculous meningitis, it is necessary to have a clear conception of the constitutional as well as the ocular symptoms; and this is difficult to get from the literature extant.

It is very essential to coordinate the ocular and the general symptoms to arrive at an early diagnosis. This is better accomplished by the oculist and the general practitioner cooperating; but in the absence of such cooperation it is all the more important for both sets of symptoms to be understood by the single medical attendant.

Metzner[1] considers that tuberculous or basilar meningitis is always a secondary affection, and that the virus may be carried to the meninges from tuberculous glands, bones and joints, or more frequently from ear infection; that acute infectious diseases lay the foundation for the tuberculous process, and that tuberculous meningitis is most often found in children. There is a short prodromal stage, with more or less headache; vomiting, with pains in the chest and abdomen, loss of weight, drowsiness and impaired intelligence. In the second stage, involvement of the spinal cord is shown by tenderness along the spine or stiffness of the neck. The cranial nerves may now be involved, shown by ptosis of one or both upper lids, convergent or divergent strabismus, involuntary lateral movements of the globes, and inequality of the pupils, with light reaction sluggish or absent. The reflexes are usually exaggerated at first, later diminished, and finally lost. The temperature may vary from 100 to 104 F. At death it may fall to 88 or rise to 106. The pulse is usually slow in the early stages, and later small and rapid. A primary focus, or tubercle bacilli in the cerebrospinal fluid, establishes the diagnosis. Metzner gives an illustrative case in a boy, aged 16 months, and says that the disease is probably always fatal. Necropsy in the case of this child revealed a plastic exudate covering the pia and at the base. In the latter situation it was most pronounced, measuring 3 mm. in thickness.

1. Metzner, A.: Tuberculous or Basilar Meningitis, with Case Report and Autopsy Findings, Indianapolis M. J. **18**: 191, 1915.

Nichols[2] states that tuberculous meningitis is secondary to a discoverable tuberculous lesion elsewhere, that it is due to the presence of tubercle bacilli in the pia or at the base, that typical miliary tubercles invade the meninges in either small foci or large areas, and that there is a mucilaginous exudate, with a very large amount of serum. Of the eye symptoms, he says that ocular palsies are especially common, but variable; that the sixth nerve is particularly susceptible, diplopia occurring from failure of one or both nerves; that nystagmus is a prominent symptom; that the pupils react sluggishly, undulate, and often dilate when light is thrown on the retina. Early in the disease the pupils are miotic, and later mydriatic. He further mentions double choked disk and tubercles of the choroid.

Hawthorne[3] points out the usual vague and indefinite character of the early symptoms in tuberculous meningitis, gradually increasing coma, with or without vomiting, being the only suggestion of a brain lesion. He then relates two cases of sudden onset, with localized palsies or convulsions, and observes: "There would seem to be some practical value in illustrations of the statement that a localized paralysis or a unilateral convulsive seizure may mean the clinical beginning of tuberculous meningitis." In the first illustrative case, in a boy of 10 years, the fundus oculi and the cerebrospinal fluid were negative during the stage of convulsions and paralyses; but later, severe headache, persistent vomiting, fever, and cellular elements in the cerebrospinal fluid made the diagnosis certain. In the second case, a baby boy of 19 months had sudden convulsions limited to the right side; remission for forty-eight hours; then a recurrence, with gradually developing signs of tuberculous meningitis, which were confirmed by postmortem findings.

The tenet that this disease is secondary to some primary tuberculous focus is subscribed to by Hawthorne, although he mentions the well known fact that it is not uncommon to find no cerebrospinal fluid change or tubercle bacilli. The brain symptom first noticed shows the arrival of the irritant through the blood stream, in the form of minute emboli. The infection gradually extends. An old quiescent focus may light up and spread.

Ocular paralysis may occur in pulmonary tuberculosis, and several weeks later, general tuberculous meningitis, showing first a limited infection, and later a spreading by continuity or contiguity of tissue.

Sauer[4] writes along the same lines, supporting his contention of the diagnostic value of localized paralysis as an early sign of tuberculous meningitis, by two illustrative cases.

Hickling[5] reports the case of an infant, aged 13 months, who, after two months of varying sickness with occasional convulsions, developed tuberculous meningitis. There was no optic neuritis, but the right pupil was widely dilated. There were clonic spasms, sudden vomiting, the night cries of meningitis, head pains, wasting, and death in two weeks.

Tuberculous meningitis in an infant, aged 10 weeks, is recorded by Sherman.[6] There were mild convulsions and dull mentality. Ptosis and mydriasis of the right eye developed on the third day, and both pupils reacted sluggishly.

Van der Bogert[7] asserts that tuberculous meningitis occasionally ends in recovery, reports the cure of a 3½ year old child in his practice, and refers to articles by seven other observers. Between 2½ and 3½ years of age, the child suffered from measles, whooping cough, and finally a "grippy" cold. Then typical signs of meningitis appeared and persisted for two months, when lumbar puncture was made for marked pressure symptoms. The spinal fluid gave a lymphocyte count of 45, and two typical tubercle bacilli. The turning point in the disease immediately followed lumbar puncture, and in six months the child was pronounced well, though excitable.

Browning[8] states that the tendency to the arrest of tuberculous processes is very slight in involvement of the meninges, but that enough cases of prolonged arrest or cures have been recorded to show that such termination is possible, though infrequent. He reports four cases that he classifies as cures. Although there were tuberculous foci, no laboratory proofs were given.

Meyers[9] gives a full and interesting study of 105 cases of tuberculous meningitis.

As my cases of tuberculous meningitis in children differ in no respect from those outlined above, none of them are here reported. A few adult cases of the type that is first seen by the ophthalmologist are now noted, rather than the advanced cases in which the diagnosis of the general disease has already been made by the internist, the ocular manifestations then being of interest rather than importance.

REPORT OF CASES

Case 1.—A man, aged 31, referred by the late Dr. B. P. Anderson, who suggested meningeal involvement but desired to have the question of eye strain determined as the possible cause of a recently developed headache, had so far recovered from pulmonary tuberculosis as to be on the point of accepting a clerical position. Associated with the headache, which had been constant for five days, were pains in and about the eyes. Four days later the headache was even more severe, and there was projectile vomiting and slight hyperemia of the disks. By five days later diplopia, mydriasis of the right eye and miosis of the left had developed. In another two days the hyperemia of the retina and papilla were increased, the patient was dull and irritable by turns, and the vomiting continued. On the following day delirium developed. Coma, right miosis, left mydriasis, with ptosis of the left upper lid, and optic neuritis, without retinal hemorrhage or choked disk, supervened on the next day. Death occurred twenty-four hours later.

Soon afterward, Dr. Anderson wrote that in over forty years of practice, largely among tuberculous patients, he had never seen severe, persistent headache in such cases that was not the precursor of tuberculous meningitis.

Case 2.—A man, aged 40, referred by Dr. A. G. Staunton because of blurred vision, and a diplopia which had appeared two days before but was gradually disappearing, had normal vision with correcting lenses. Six weeks later, following the excessive use of alcohol, the patient was again affected by diplopia and diminished vision, and also persistent headache. The sight and mentality steadily failed, the head was drawn to one side, and great restlessness developed. No marked ophthalmoscopic changes were observed by Dr. W. H. Crisp who, with Dr. Staunton, attended the patient in the last few

2. Nichols, C. L.: Tuberculous Meningitis, Long Island M. J. **11**: 271, 1917.
3. Hawthorne, C. O.: Localizing Brain Symptoms (Hemiplegia and Hemispasm) as Early Events in Tuberculous Meningitis, Brit. J. Child. Dis. **12**: 232, 1915.
4. Sauer, L. W.: Hemiparesis and Hemiplegia as Early Symptoms of Tuberculous Meningitis, Arch. Pediat. **31**: 902, 1914.
5. Hickling, G. H.: Case of Tuberculous Meningitis of Unusually Long Duration, Practitioner, London, **99**: 390 (Oct.) 1917.
6. Sherman, D. H.: Tuberculous Meningitis, New York M. J. **108**: 618 (Oct. 5) 1918.
7. Van der Bogert, Frank: Prognosis in Tuberculous Meningitis, Report of a Recovery, Arch. Pediat. **35**: 676, 1918.
8. Browning, C. C.: Report of Four Cases of Tuberculous Meningitis with Apparent Permanent Arrestment, Tr. Am. Climatol. A. **30**: 165, 1914.
9. Meyers, A. E.: A Study of 105 Cases of Tuberculous Meningitis, Am. J. Dis. Child. **9**: 427 (May) 1915.

weeks. Death occurred twelve weeks after the first appearance of diplopia and dimness of vision, and six weeks after their reappearance and the first onset of severe headache. As the patient was in Colorado for treatment for pulmonary tuberculosis, the diagnosis of tuberculous meningitis was made.

CASE 3.—A man, aged 26, referred by Dr. H. L. Fowler on account of failing vision for the previous two days, had vision of 10/120 in the right eye and 10/200 in the left eye. The optic disks were red, with obscure margins, and the retinal vessels were full and tortuous. The patient had been in Colorado for one and a half years because of pulmonary tuberculosis, for which he was being treated. The Wassermann test was negative. Two days after the first ophthalmic examination, the optic neuritis was more pronounced and the vision further reduced. A week later there was light perception only, severe headache and great restlessness. Death occurred a few days later from evident tuberculous meningitis.

CASE 4.—A man, aged about 45, was referred by Dr. G. L. Monson because of paralysis of the internal rectus and levator, and mydriasis of the left eye. The ophthalmoscopic examination was negative, but the patient was prostrated and complained of severe and unremitting headache. Later, typical signs of meningitis developed; and as the case was one of arrested pulmonary tuberculosis, the diagnosis of tuberculous meningitis was made and concurred in by all consultants. Death occurred within one week of the onset of the ocular symptoms.

CASE 5.—A man, aged 34, with arrested pulmonary tuberculosis, who was referred by the late Dr. W. C. Allen, and whose right membrana tympani ruptured spontaneously, had a slight discharge from the ear. The discharge ceased and reappeared alternately for five and one-half months, when the ear was dry and the patient felt well and hopeful. Three days later there was pain in the ear, the following day convulsions, and one day later the signs of meningitis localized on the right side, with extreme prostration. Death came on the next day. Necropsy disclosed the attic full of granulations, an abscess in the petrous portion of the temporal bone, and the right cerebral lobe bathed in pus, which was most abundant in the middle fossa.

COMMENT

As Colorado has long been a well known resort for sufferers from tuberculosis, the medical profession has naturally looked to Colorado physicians for contributions to the pathology, management and outcome of this dread disease. This expectancy has not been disappointed so far as the general workers in this field are concerned, as the literature on tuberculosis amply shows. Notable contributions have also been made by Coloradoans along the lines of ophthalmology and otolaryngology. But the fact that the disease is often checked or arrested under favoring climatic conditions, and is less likely to partake of the miliary form of tuberculosis in a state where living conditions are generally favorable, are probably the reasons that tuberculous involvement of the eye and brain is less often observed and reported by Colorado ophthalmologists than might be expected.

I have been struck by the great preponderance of tuberculous meningitis in adults as compared with children, and in men as compared with women, in my practice of twenty years in Colorado. When summoned early in the disease, it has been because the patient attributed the severe headache to eye strain, and sought relief through glasses; or dimness of vision had been the reason for the summons. Later, palsies of certain external ocular muscles or the levator, mydriasis, and blindness of one or both eyes, called for counsel from the ophthalmologist. The ophthalmoscopic findings were usually disappointing, even negative at first. As the disease progressed, hyperemia of the papilla or moderate edema of the disk and adjacent retina was often seen; but choked disk, with marked retinitis and occasional retinal hemorrhage, was only rarely observed. Tubercles of the choroid were never seen, though always searched for. The failure to find them may have been due to the inability to make frequent examinations with the electric ophthalmoscope, with which Marple [10] had such extraordinary success in finding choroidal tubercles in infants that he readily accepted Carpenter and Stephenson's report of 50 per cent. of their cases of tuberculous meningitis showing tubercles of the choroid. Parker [11] estimates that about 10 per cent. of the cases of tuberculous meningitis show discrete tubercles of the choroid except in general miliary tuberculosis, where they may be found in nearly half the cases.

In all my cases there was a frank history of pulmonary tuberculosis, usually subsiding or quiescent. In many cases the patient was so markedly improved as to be contemplating or arranging for a return to active life. Given such a history, with a severe headache of sudden onset and notable persistence, and unlike the eye strain types of headache, I am ever on guard for the revealing symptoms of tuberculous meningitis. Usually I have not failed in realizing this gruesome expectancy. Further, it has been my experience that in adults there is not the slowly developing prodromal stage observed in children, in whom headache is but one of many of their symptoms in this grave disease.

Called eight years ago to a Denver man (Case 4) with a history of tuberculosis arrested many years previously, whose only symptoms were severe, persistent headache, unilateral ptosis, divergent squint and mydriasis (with negative ophthalmoscopic findings), I was unable to give even a tentative diagnosis of tuberculous meningitis. An eminent internist and a neurologist were equally puzzled. After several days the typical signs of tuberculous meningitis made it clear to all what fatal disease was manifesting itself.

A few years later a tuberculous man (Case 3) who had shown satisfactory improvement in the pulmonary condition developed sudden impairment of vision in one eye, associated with severe, constant headache. A moderate optic neuritis was present. The expert diagnostician summoned declared that the condition could be diagnosed either as brain tumor, syphilitic optic neuritis or tuberculous meningitis. I stood out for tuberculous meningitis, the expert on tuberculosis concurring. The patient died within two weeks of tuberculous meningitis, with binocular blindness.

The point I would emphasize is, that severe headache of sudden onset and persistent character in an adult patient with a history of tuberculosis, either active or quiescent, should awaken a suspicion of tuberculous meningitis. And especially if taken in connection with disturbances of the motility of the eye, upper lid or pupil, or impairment of vision, this type of headache should strongly suggest tuberculous meningitis. It would seem that the ophthalmologist might thus first point the way to the diagnosis of a disease of insidious onset well before the comparatively slow development of the syndrome that makes its recognition so easy that "one who runs may read."

219 Majestic Building.

10. Marple, W. B.: Tubercle of the Choroid in Tuberculous Meningitis, Ophthalmoscope **10**: 559, 1912.
11. Parker, W. R.: American Encyclopedia of Ophthalmology **11**: 8343.

THE THERAPY OF CATARRHAL FEVERS

BERNARD FANTUS, M.S., M.D.
Associate Professor of Therapeutics, Rush Medical College
CHICAGO

As the Pfeiffer bacillus is no longer regarded as the specific cause of influenza, and as bacteriologically and clinically it is practically impossible to distinguish between influenza, grip and the common "cold," the old term "catarrhal fever" might be advocated as a convenient designation for this group of clinical conditions characterized by inflammation of the mucous membranes and rise in body temperature. The difference in contagiousness and distribution might be indicated by the adjectives "pandemic," "epidemic" and "endemic." The acceptance of such a term would give a place in systematic medical literature to the ordinary "cold" which, though in its protean manifestations perhaps the commonest of ills, is, strange to say, not discussed in standard textbooks on medicine. The use of this term would relieve us of the diagnostic embarrassment in which we at present not infrequently find ourselves, of attempting to differentiate between influenza and the ordinary "cold," conditions so closely akin to each other that efforts to make a strict differentiation between them merely show the futility of such attempts. The term would be employed just as we use eczema, pleurisy, peritonitis, meningitis, asthma or epilepsy, each of which embraces a number of conditions of diverse etiology and pathology, but clinically similar enough to make profitable the discussion under the respective headings. Our therapy should be improved by the recognition of the essential similarity of the principles underlying the treatment of these nonspecific febrile inflammations of mucous membranes, and by the application of the massive experience we have gained in the treatment of influenza to the benefit of the common "cold."

ETIOTROPIC THERAPY

As bacteriologists have failed to demonstrate any but common and frequently nonpathogenic micro-organisms in influenza, and as various bacteria have been found in different localities and in different cases, we must assume that these germs are merely secondary invaders taking advantage of a condition of lowered resistance to assert their pathogenicity. The sudden simultaneous loss of resistance on the part of almost everybody that occurs during an influenza pandemic, spreading as it does along the lines and with the speed of human travel, can be explained only by a living virus disseminated by ordinary human intercourse, chiefly by the mouth spray. We shall speak of this cause as "the virus." Should future investigations enable us to name the virus, it would merely change the terms employed. This virus, in an attenuated form, is probably always with us. If this be the case, then pandemic influenza depends on the coincident development of an unusually virulent strain of the virus with that of a nonimmune human generation. As successful pathogenicity progressively increases the virulence and aggressiveness of a virus, we could understand how, under these conditions, extreme virulence would result. The pandemic recurrence of the disease at intervals of approximately thirty years would be explained by lack of immunity of a new generation.

Influenza pandemics run their course until all who are susceptible are either immunized or dead. As the virus is disseminated by innumerable carriers, sick and well, quarantine does little good. It merely delays the rapidity of the spread of the disease. During a pandemic, influenza vaccination does not protect to an important degree. Indeed, probably by reason of the negative phase induced by vaccination, it may be followed by severe and even fatal attacks.

The influenza epidemic of 1919-1920, the coming of which had been predicted with the same precision as that of an eclipse of the sun, showed the same differences from that of the previous year's pandemic that were observed on former occasions. Thus, while the pandemic of the first year appeared without reference to season or weather, the epidemic of the next year did not occur until after inclement weather had set in. The disease of the second year was much less general, much milder, and much freer from serious complications. The explanation for these facts is not difficult. Evidently, after approximately a year, much of the immunity acquired during the pandemic is lost. This seems especially true of those who had a mild attack during the pandemic year. However, it now requires an additional factor to start influenza in epidemic form; and this factor is furnished by chilling; hence, the onset after cold weather. During the secondary epidemic the disease does not spread with the explosiveness so characteristic of the pandemic. It is much milder and rarely fatal, because there is some residual immunity from the previous year's pandemic, and also because those who were incapable of acquiring immunity are now dead. Losing sight of this mildness of the influenza epidemic following a great pandemic renders us liable to fallacious therapeutic deductions. During such an epidemic, it would not be difficult to have a series of 500 or more cases of influenza without a single death, no matter what the treatment, provided the patients had good nursing.

Last year's epidemic probably has immunized our people against the virus to such a degree that no very extensive epidemic will occur this year. However, when bad weather sets in, we shall have a run of "colds," the chilling being requisite to lower the immunity of those with poor resistance. Coincidently the virus may become endowed with greater aggressiveness, and limited contagion may likewise result. As the general immunity of the people is no doubt better this year than it was the year before, there will not be nearly so many cases; and, on the whole, they will be milder. It seems safe to predict that "catarrhal fever" —not to use the term influenza, which is associated in our minds with specific etiology, high virulence and great contagiousness, nor "colds," as some of these cases are surely not due to chilling—will continue to manifest itself from year to year with irregularly decreasing virulence, until another pandemic sweeps the world.

An attack of catarrhal fever is a struggle for immunization, lasting on an average about three days, after which there is a period of extremely precarious equilibrium of immunity with a great tendency to relapse or the development of complications. The immunity, when finally acquired, is absolute only for a relatively short time, recurrence of the disease not infrequently taking place within two or three months. It is difficult to see how prophylactic immunization can be of much value against a disease that does not immunize better against itself, especially as we do not really know its exciting cause. On the other hand, the prevention of the dissemination and implantation of the virus, when

in condition of increased virulence and aggressiveness, is decidedly indicated. Free ventilation dilutes the virus and removes it, just as running water washes away dirt. But ventilation must be accomplished without chilling the inhabitants of the room. Coughers and sneezers who do not catch their mouth spray are liable to be dangerous to the community. Every case of "cold" should be surrounded with precautions against contagion; for, while some of these cases are noncontagious, others are—and we cannot at present distinguish between them. Children who cough, sneeze or have running noses should be excluded from school and kept at home until cured; and this not only to protect others, but also for the sake of the ailing child itself: for exposure to inclement weather is liable to aggravate the trouble, or to give rise to possibly serious complications.

The best prophylactic against endemic catarrhal fever, or "colds," is "hardening," i. e., accustoming the body to exposure to cold, so that such exposures do not produce chilling. It would lead us too far to discuss the technic of the "hardening" process. It should be pointed out, however, that the very young, the very old and those crippled by organic disease may be harmed instead of benefited by it. For these, protection by suitable climate or by keeping indoors during inclement weather is the rule of safety.

Removal of chronically inflamed tonsils, adenoids or nasal polypi, straightening of deflected septums—in short, doing away with foci of infection—is an important principle of prophylaxis, so well established that further discussion of this seems unnecessary here. Prophylactic vaccination, on the other hand, is at best an experiment in any case. It may result in benefit or in harm, dependent on a number of conditions, some of which are at present not under control.

The predominance of the idea of infection has led to employment of all kinds of antiseptic topical applications. As anything that will kill germs will kill the infected membrane and thereby do more harm than the germs would do, the use of germicides is out of the question. Bacteriostatic or germ-growth inhibitive applications are capable of exerting their effect only so long as they are on the membrane in sufficient concentration, which in any of these cases can be only for a negligably short time. Hence, topical treatment has no etiotropic significance in catarrhal fever, though it may have value by cleansing, soothing, analgesic or astringent action, or by the production of hyperemia.

RESTORATIVE TREATMENT

The chief problem in catarrhal fever is to restore the lost immunity; and, to favor this, the single most important item known is warmth, just as chilling is, no doubt, an important factor in the loss of resistance in many cases. As long as the patient's temperature is normal, confinement in adequately heated rooms might be sufficient; but when the heat-regulating mechanism has been upset to the degree evidenced by fever—no matter how mild—absolute rest in bed is imperative, because only in this way can chilling be prevented with any degree of certainty. This must include the use of the bed-pan and the urinal. The sooner such bed treatment is commenced, the milder usually is the course. In all severe or fatal cases that have come under my notice, the patient sinned by not going to bed soon enough, or by not staying in bed long enough or thoroughly enough.

Diaphoresis by means of heat is a time-honored remedy, the more efficient the earlier it is used. It probably acts chiefly by stimulation of immunization processes resulting from the induced slight pyrexia, rather than by changing the distribution of the blood or by elimination of poisons in the sweat, as has been suggested. However, sweating sometimes aggravates the cases, unless followed by warmth of bed. The disadvantage of sweating is that it predisposes to chilling. When we are wrapped in wet coverings, we lose heat more rapidly than when exposed naked to the same temperature. Hence, when a patient is sweating, we should see to it that he is not permitted to lie in wet garments. We must keep him warm and dry, no matter how much trouble that may cost.

Even more difficult than to get the patient to go to bed is to have him stay in bed long enough—let us say for three days of normal temperature—or longer, if there is a continuance of symptoms or a murmur at the heart. Rightly viewed, catarrhal fever is a beneficent process. It results in valuable immunity, provided we give it a chance to become well established. If a patient gets chilled, while his resistance is still in precarious equilibrium, he is not only prone to recurrence or persistence of the affection or its extension to continuous or contiguous areas, such as the middle ear or the lymph glands, but also liable to deep localizations of infection, with resulting pneumonia, pleurisy, endocarditis, pericarditis, acute articular rheumatism, multiple neuritis, nephritis, etc. Thus, approximately 50 per cent. of all cases of pneumonia are preceded by catarrhal fever, the proper treatment of which would probably have prevented the serious disease. In the great majority of cases of acute articular rheumatism and of endocarditis, these conditions are preceded from a few days to a week or two by tonsillitis or some other manifestations of catarrhal fever. Most of the patients complaining of neuritis or neuralgia admit having had a "cold" some time previously, and inquiry reveals that rest in bed or confinement to the house had not been resorted to. On the other hand, people who apply the "coddling" treatment conscientiously are practically free from these sequelae. These are old and well known facts, which, like other not sufficiently appreciated and practiced truths, not only deserve reiteration, but demand it.

Alkali is the only medicament likely to aid in the establishment of immunity. There is some evidence that acidosis is present in these fever patients, and that acidosis antagonizes immunization. There is also a clinical tradition that alkali favors recovery and prevents complications, perhaps by antagonizing acidosis. Sodium citrate is the most pleasant administration form of alkali. We may, therefore, have the patient take a glassful of lemonade every two hours, to which a quarter of a teaspoonful of baking soda has been added; or we may prescribe 1 or 2 gm. of sodium citrate in lemon or orange syrup, to be taken diluted with a glassful of water every two hours. The taste of this salt is so inoffensive that children generally take it without any trouble whatever in doses appropriate to their age.

The liberal—though not excessive—use of fluid is important in all cases of this, as well as of other fevers. From one-half to one tumblerful should be given every hour while the patient is awake. It may generally be prescribed in the form of liquid diet, given every two hours, and a fruit drink (lemonade, orangeade, grape juice or raspberry juice and water) every two hours, alternating with the diet. Of course, when there is albumin in the urine, soup and other prepara-

tions derived from meat would be interdicted. A special difficulty arises in the administration of fluid in the emetic form of influenza; and in no form is the meeting of this indication more imperative. Albuminuria is nearly always present in those cases in which emesis is a prominent part of the clinical picture. It may be that the vomiting, by fluid depletion of the system and concentration of the urine, may cause kidney irritation; or it may be that the kidney involvement leads to emesis by causing uremia or acidosis. Possibly a vicious circle is present, the breaking in on which leads to therapeutic triumph. This may often be accomplished by the extrabuccal administration of fluid and by absolute gastric rest for a sufficient length of time. In this condition, antiemetics are disappointing. They often aggravate and prolong emesis by interfering with the required gastric rest. The vomiting ceases if one leaves the stomach absolutely alone, not permitting even water excepting an occasional teaspoonful to moisten tongue or lips, provided one gives fluid by rectum, or, if this be nonretentive, by the most available parenteral route. Usually, a 2 per cent. solution of baking soda is retained, when administered rectally by means of a catheter and the barrel of an ordinary glass syringe serving as a funnel, in quantities of from 2 to 8 ounces, according to the age of the patient and his rectal irritability, every two to four hours, the shorter intervals being employed when only small amounts can be given. After from twelve to twenty-four hours of this regimen, the patient usually retains hourly tablespoonful doses of carbonated water. Cream and carbonated water, equal parts, may also be given every hour alternately. After another twelve hours, the quantity of each of the fluids is increased to a wineglassful; and, if the emesis does not recur, soon cupfuls of fluid can be given. The parenteral administration of fluid is continued until one is well satisfied that the patient retains an abundance of fluid by mouth.

The old notion that hyperemia is harmful in inflammation, and the antiphlogistic treatment based thereon, have been quite generally discarded in favor of the view, especially championed by Bier, that the hyperemia is essential to the restoration of lost local immunity. As, however, an excess of hyperemia may produce harm, we must beware of using hyperemia-producing agencies in the presence of extreme congestion. At such time only cleansing and soothing or astringent applications are admissible. Where such excess is not present, encouraging the hyperemia, especially by the employment of heat, is indicated. Thus the prompt use of prolonged hot irrigations of the ear at the first appearance of earache, coupled with the general "coddling" treatment, frequently succeeeds in checking the progress of middle ear inflammation. The hyperemia may be produced by reaction from cold, as by flannel-covered cold compresses to the side of the neck, so grateful to many patients with tonsillitis. Or it may be induced by chemical means—the mustard poultice, or by painting with tincture of iodin—applied to surfaces overlying the affected part, as the chest, which often relieves soreness.

SYMPTOMATIC TREATMENT

Of late the artificial production of fever by means of foreign protein has been advocated in the treatment of influenzal pneumonia and of other infections, and fairly favorable results are reported. While, in view of the limited number of observations, this form of treatment can hardly be considered established, it at least bids us pause in routine and indiscriminate antipyresis. If it is true that fever favors the establishment of immunity, then antipyretic therapy is a mistake. That the lowering of temperature, be this by medicinal antipyretics or by the use of cold, does not shorten the course of the disease or lessen its mortality, is generally admitted. Indeed, when a grave complication, such as pneumonia, arises, the antipyretics are commonly abandoned, unless the temperature has an extremely high range. If it is not well to employ antipyretics in the presence of a serious infection, is it wise to use them in an infection that at any time may become serious?

During the pandemic, as a routine, I employed pyramidon or acetylsalicylic acid in small doses as analgesics, and believed I was helping my patients, for often they praised the prompt relief obtained by the medicine. Many, however, complained of the drenching sweats induced by the drugs, which led some of them to stop their use, and they could do this without recurrence of the aches and pains. Having learned to fear the sweating as a predisposing cause to complications by way of chilling, I completely abandoned the use of these agents during last year's epidemic, and found that patients did not suffer as greatly as I had feared. On the whole, the patients were more comfortable by sweating less. No doubt a few small initial doses of these analgesics (as pyramidon, from 0.10 to 0.15 gm.) with the addition of extract of hyoscyamus, from 0.010 to 0.015 gm., to antagonize sweating, may contribute toward comfort. But to continue these agents day in and day out or to give them in large doses is inadvisable.

Cathartics need not and should not be given in a routine manner. Having employed calomel-saline catharsis up to within the last few years, and having reaped a few cases of stomatitis as the result, I have practically given up this practice, and find that my patients are none the worse for the change. The early administration of saline or castor oil—usually undertaken by the people on their own initiative—is either responsible for or at least coincides remarkably often with initial vomiting, which continues sometimes as the most annoying part of the clinical picture. If the patient's bowels have not moved for twenty-four hours, the administration of an enema of 2 per cent. baking soda does no harm and usually accomplishes all that is required. If not, magnesia magma may be given every two hours, a teaspoonful or two for infants, a tablespoonful or two for adults, until a satisfactory evacuation is secured. If this does not act well, a peristalsic stimulant, such as cascara sagrada, is required, of the aromatic fluidextract of which a teaspoonful or more may be given at bedtime.

One of the chief indications, in cases in which there is cough, is to encourage expectoration; the worst thing to do is to check the cough. For thinning the mucus, so as to favor its expulsion, there is nothing that can take the place of water, whose liberal ingestion has been emphasized. It is probable that the addition of salines, such as sodium citrate, ammonium chlorid or sodium iodid, enhances the expectorant value of water. Of these, sodium citrate is the least offensive; and, being also an indirect alkali as well as a diuretic, it is more often likely to be of use in catarrhal fever than any other drug. Best of all, it cannot do any harm, unless it favors the appearance of urticaria, which occurred in two cases while under the influence of the citrate—whether because of the drug, it is impossible to tell.

Ammonium chlorid is possibly a more powerful expectorant than sodium citrate; but it is also more

unpleasant in taste and occasionally provokes emesis in infants. Usually a dose of 0.06 gm. is well borne by a child 2 years old. For adults, 0.50 gm. of ammonium chlorid may be given every hour or two, according to the urgency of the expectorant action required.

Iodid is the most potent of saline expectorants; but, owing to possibility of excessive action (iodism), it is unwise to use it in the presence of acute coryza, laryngitis or bronchitis. When, however, the first few days have passed without decided improvement of the cough under milder treatment, iodid may usually be resorted to with benefit. It may be given in doses of 0.12 gm. every two hours, with directions to increase the interval between doses to four hours as soon as the cough loosens up, the nose runs, or the eyes water. For children, the iodid effect is most pleasantly obtained by giving sajodin in doses of 0.06 gm. mixed with sugar (0.30 gm.) and cacao (10 per cent.), preferably in the form of sweet tablets, though powders will do if tablets are not available.

An opiate to check the cough is dangerous, as opiates favor retention of secretion and the development of bronchopneumonia. As a rule the cough is the patient's friend. When, however, an individual has been harassed by a useless dry cough for a night or two, a single dose of an opiate to favor sleep might do more good than harm; but to administer opiates, including powder of ipecac and opium (Dover's powder), in a routine manner and continuously is bad practice.

CONCLUSIONS

To draw a sharp distinction between influenza, grip and "colds" is futile; hence the term "catarrhal fevers" is advocated to embrace the whole group. The recognition of the essential similarity of these conditions might enable us to turn our experience with influenza to good account in the treatment of the common "cold."

Even a mild case of catarrhal fever requires absolute bed treatment, continued until the patient has been well for several days. "Coddling" is the rule of safety in catarrhal fever; "hardening" in its prophylaxis.

With the possible exception of alkalis, the use of medicines is merely symptomatic. We must beware against procuring comfort by the sacrifice of interests more vital to the patient. Thus, routine antipyresis is a mistake, though the sparing initial use of a few small doses of members of the antipyrin or salicylate group as analgesics may do no harm.

Opiates to check cough should be used most exceptionally in catarrhal fever. The indication is to favor expectoration, as by saline expectorants and by fluid.

719 South Ashland Boulevard.

The Causes of Intussusception.—John Morley maintains (*Brit. M. J.* **2**:542 [Oct. 9] 1920) that in all the discussions on the etiology of intussusception, attention has tended to be concentrated on the mechanism by which the process starts. Is the invagination started by a localized spasm of a segment of the bowel or by a localized paresis? It is an interesting pathologic problem, and the evidence is in favor of spasms as the exciting cause. But far too little attention has been given to a predisposing cause of intussusception that is almost always present, namely to lack of peritoneal fixation of the proximal colon. It is obvious that this factor does not influence the rare enteric form of intussusception. But in the common form in which the ileocecal valve forms the apex, or the ileocolic form in which the lower ileum first prolapses through the valve until it jams, and then the ileocecal region travels along the colon, we find a definitely abnormal mobility of cecum and ascending colon, with persistence of the ascending mesocolon and often a definite pericolic membrane.

THE PHENOMENON OF VERNES AS APPLIED TO THE SERODIAGNOSIS OF SYPHILIS

PRELIMINARY REPORT

LEON H. CORNWALL, M.D.

AND

LOUIS S. ARONSON, M.D.

Instructors in Neurology, Columbia University College of Physicians and Surgeons

NEW YORK

It is only since the discovery of *Spirochaeta pallida* by Schaudinn in 1905 that syphilis has been the subject of extensive laboratory research. Previously the disease had been studied almost exclusively from the clinical point of view. Even before Schaudinn's epochal discovery, Bordet and Gengou,[1] in 1901, described a new procedure for the diagnosis of infectious diseases based on the phenomenon that we know today as complement fixation. During the same year that Bordet and Gengou recorded their classical observations, Widal and LeSourd [2] applied the principle of complement fixation to the diagnosis of typhoid fever.

In 1906, Wassermann, Neisser and Bruck [3] described a method for the indirect application of the phenomenon of Bordet and Gengou which has been universally known since that time as the Wassermann test. The original method of Bordet and Gengou could not be applied by Wassermann and his co-workers because of the impossibility of growing *Spirochaeta pallida* in pure culture. It became necessary, therefore, to find a substitute for a culture of the spirochete, and for this purpose Wassermann utilized an aqueous extract of the liver of a syphilitic fetus. By virtue of this substitution there was introduced into the technic of the test a factor of nonspecificity that has been a stumbling block in the pathway of the serodiagnosis of syphilis ever since. This factor of nonspecificity was largely ignored in the first wave of enthusiasm that greeted the adoption of the new method. It was not long, however, before it was found that the same results that Wassermann reported could be obtained with alcoholic extracts of organs containing no *Spirochaeta pallida*, such as the heart or liver of man, ox or guinea-pig.[4] Herein, therefore, lies the distinction between the specific immunologic phenomenon of Bordet and Gengou and the nonspecific biologic test of Wassermann, and this factor of nonspecificity has been a constant subject of dispute from the original publication of Wassermann's work to the present day. Various organic chemical substances, such as pure lipoids, cholesterin and lecithin,[5] have been advocated by some as substitutes for the "so-called antigens" derived from organ extracts, while others have introduced organic chemical substances into the alcoholic organ extracts, thereby increasing the sensitivity of the latter.[6]

Despite the enormous amount of labor that has been spent in efforts to standardize the technic of the Was-

1. Bordet, J., and Gengou, O.: Ann. de l'Inst. Pasteur **15**: 289, 1901.
2. Widal and LeSourd, in LeSourd, Thèse doct. Fac. méd., Paris, 1902.
3. Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr. **32**: 450, 1906. Wassermann, Neisser, Bruck and Schuct: Ztschr. f. Hyg. u. Infektionskr. **55**: 451, 1906.
4. Landsteiner, Müller and Pötzl: Wien. klin. Wchnschr. **20**: 1421, 1565, 1907.
5. Noguchi: J. Exper. Med. **11**: 84, 1909. Sachs and Rondoni: Berl. klin. Wchnschr. **45**: 1968; Ztschr. f. Immunitätsforsch., Orig., I. 1908-1909, p. 132.
6. Sachs: Berl. klin. Wchnschr. **68**: 2066, 1911. McIntosh and Fildes: Syphilis, London, 1911, p. 220. Walker and Swift: J. Exper. Med. **18**: 75, 1913.

sermann test, it has remained a nonspecific biologic test based on no certain immunologic principle. For a long time it has been believed that the results were attributable to physicochemical reactions, but nevertheless the mechanism of the reaction has been explained in the immunologic terms of Ehrlich's side chain theory. Not a few authors, believing the reaction to be dependent on certain physicochemical transformations due to the presence of albuminoid substances in the blood serum, have sought other methods than hemolysis for the detection of the pres-

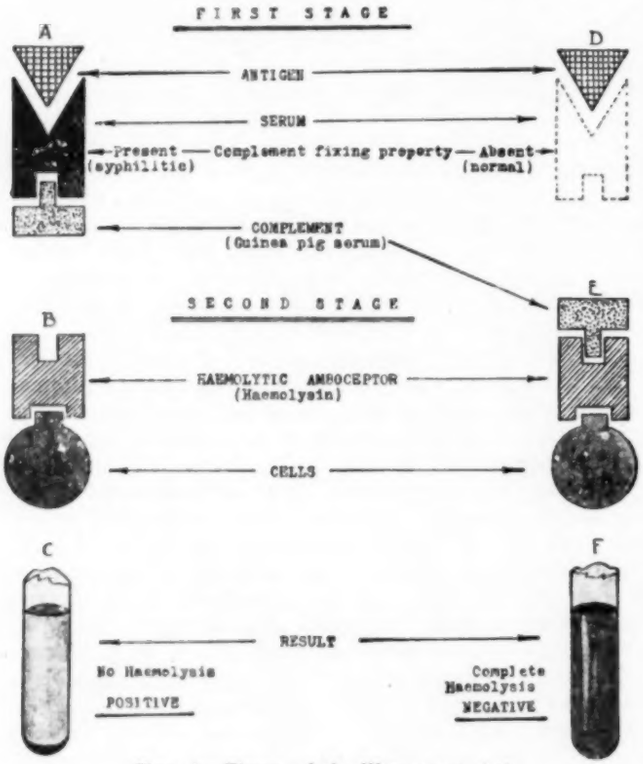


Chart 1.—Theory of the Wassermann test.

ence of these substances. As evidence of such attempts one might mention the precipitoreaction, the coagulo-reaction, the freezing reaction, and the Bruck test.[7]

In testimony of the need that has been felt for standardized methods, a glance at the literature of the subject gives immediate proof of the tenor of feeling.[8] The extensive and numerous contributions on this subject by Kolmer and his collaborators illustrate the number of factors capable of producing variations in technical results. A diagnostic reaction capable of being varied by so many factors, dependent on such thorough appreciation of fundamental serologic principles, and requiring such numerous and precise titrations of all the elements concerned must, of necessity, be productive of discordant results. Owing to the practical feature of this problem, an effort for the determination of the reliability of the reaction and for its standardization was begun in this country as early as 1915 by a committee[9] of serologists representing a number of the larger institutions in the greater city of New York. After two seasons of labor, including many hundreds of comparative titrations, the work was left unfinished but was, in part, made the subject of a report by Ottenberg.[9]

Owing to the differences in the technic employed in different laboratories and by different individuals, widely varying and discordant results have been reported,[10] and clinicians have sounded notes of alarm and have aimed sharp criticisms at serologic laboratories and serologists in general. Even among the most ardent defenders of the Wassermann test, with whom one of us has allied himself, it has been realized that results vary under different conditions of technic and that many unreliable results are reported by unskilled technical workers.

The necessity of studies aimed at the clarification of the physicochemical properties of blood serum as an antecedent to the perfection of any precise and reliable procedure, based on physical chemistry, is obvious from the foregoing discussion. With this object in view Vernes, in 1909, began a series of serologic observations on the blood and spinal fluid of a large group of cases that were carefully controlled clinically.

To understand the methods employed by Vernes and the significance of his results, it is necessary to appreciate the theory on which the Wassermann test is explained and the method of arriving at the results. Briefly, it depends on the fact that the serum from individuals suffering from syphilis has the power of binding, deviating, or rendering inert complement or alexin by forming with it and the "so-called antigen" an inseparable link. Because of the invisibility of this reaction, it is necessary to employ an indicator. This indicator consists of red blood cells and a substance (hemolysin) which, in the presence of complement, is capable of dissolving the red cells, thereby producing a visible result—hemolysis (Chart 1). In case the serum is from a syphilitic individual, the complement is fixed (bound or deviated) (*A*) and is not available for hemolytic action on the red cells in the presence of their hemolytic amboceptor (*B*), the result being that the cells remain undissolved—positive reaction (*C*). If the serum is from a normal individual possessing no complement binding property, the complement cannot be fixed (*D*) and is, therefore, available for its

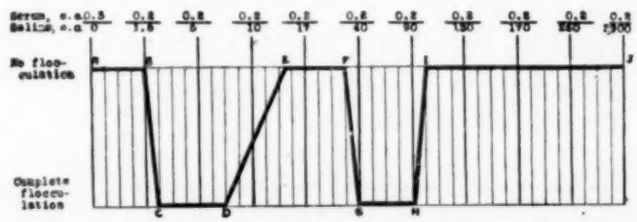


Chart 2.—Curves obtained with a suspension of 0.225 gm. of iron acetate in 250 c.c. of distilled water. Only a portion of the progression is indicated. This chart and Charts 3, 4, 5 and 6 are taken from Uffoltz: Arch. de méd. et de pharm. mil., December, 1918.

action on the red cells (*E*), the result in this case being dissolution of the red cells—hemolysis—negative reaction (*F*). Between a positive reaction, characterized by the absence of hemolysis, and a negative reaction, characterized by complete hemolysis, there are several degrees, the interpretation of which depends on the

7. Porgès and Meier: Wien. klin. Wchnschr. **31**: 206, 1908. Hirschfeld and Klinger: Sem. méd., Aug. 5, 1914. MacDonagh: Med. Press & Circ., June 27, 1916. Bruck: München. med. Wchnschr. **64**: 25 (Jan. 2) 1917.

8. Field, C. W.: A Method Developed for Obtaining a Standard Wassermann Reaction, Arch. Int. Med. **13**: 790 (May) 1914. Kolmer and collaborators: Am. J. Syph., January, April, July and October, 1919; January and July, 1920.

9. Drs. Haven Emerson (chairman), Hans Zinsser, Homer F. Swift, F. W. Famulener, C. W. Field, I. J. Levy, Archibald McNeil, M. P. Olmstead, Reuben Ottenberg and L. H. Cornwall. Ottenberg, Reuben: On the Reliability of the Wassermann Reaction, Arch. Int. Med. **19**: 457 (March) 1917.

10. Plehn: Berl. klin. Wchnschr. **34**: 1544, 1911. Rühl: Dermatol. Wchnschr. **6**: 159, 1913. Wolbarst: New York M. J. **97**: 378, 1913. Stone: Ibid. **99**: 1242, 1914. Nicholas and Gaté: Ann de dermat. et de syph. **5**: 192, 1914-1915. Ravaut: Ann. de dermat. et de syph. **5**: 285, 1914-1915. Coca: Bull. Johns Hopkins Hosp. **27**: 155, 1916. Thibierge, G.: Press méd. **26**: 609 (Nov. 28) 1918.

individual workers. This has led to the adoption of four arbitrary degrees expressed by plus signs.

Considering that such an interpretation of color changes, depending on the personal equation of the serologist, possessed an undesirable element of inaccuracy, Vernes devised a colorimetric scale consisting of eight tints numbered from 0 to 8. Zero represents the absence of any hemolysis or red coloration, and 8 represents the maximum hemolysis or deepest shade of red. By means of this scale he was able to measure in a precise manner the amount of hemolysis that occurred in serologic reactions and to record it in degrees (0 to 8). Having done this, he began a study of the results obtained with serums from the same patients from week to week. He charted these results graphically, and was able to show that the curves obtained with syphilitic serums possessed certain fundamental characteristics. He was not always able to distinguish syphilitic and normal serums by colorimetric readings because, under certain conditions, the two gave the same readings. This is similar to the experiences of all serologists, and accounts for the doubtful results reported for Wassermann reactions. By means of his graphic charts, however, he was able to detect fundamental differences between the curves obtained with normal and syphilitic serums when they were submitted to periodic examinations.

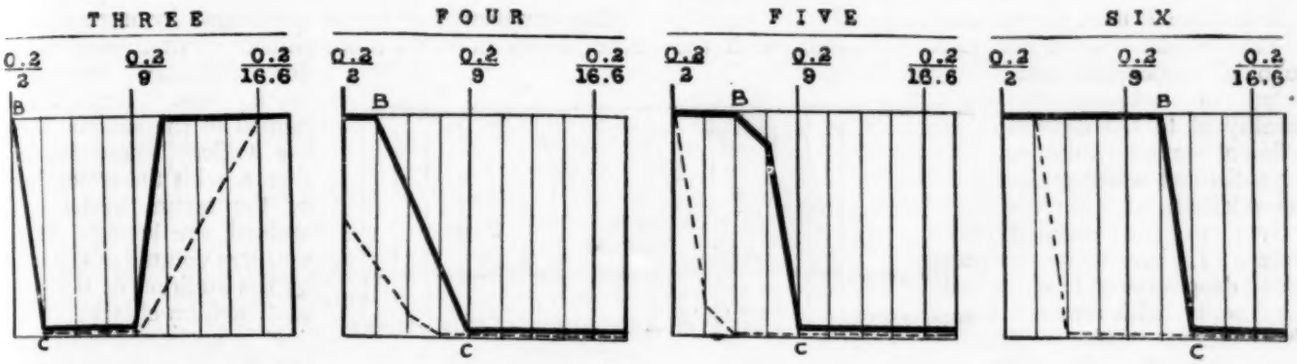
Thus, in 1913 Vernes [11] published his results based on more than 150,000 serologic reactions performed with identical technic on many hundreds of patients suffering from different diseases. He described a syphilitic chart or "graphique" illustrating a specific curve for syphilitic serums. He was able to show that, whereas the difference between normal and syphilitic serums cannot always be detected by colorimetric readings alone, when the periodic results are charted nonsyphilitic serums give invariably a horizontal line which contrasts markedly with the varying curves given by syphilitic serums.

NATURE OF THE PHENOMENON

The nature of the phenomenon which produced the distinguishing characteristics of syphilitic serums remained to be determined. It was the characteristic oscillations in the curves obtained with syphilitic serums that stimulated Vernes to attempt a complete restudy of the properties of normal and syphilitic serums by methods departing widely from those underlying the work of Wassermann. This new work was based essentially on the observation of two fundamental characteristics of the curves obtained with syphilitic serums—an ascending curve with the progress of infection, and a descending curve after the institution of treatment.

After it had been made certain that syphilitic serum possessed an unknown property, capable of being measured and graphically charted, there remained the necessity for further studies aimed at the determination of the best experimental conditions for discovering this property.

The experiment [12] that was the foundation of the subsequent work of Vernes consisted in adding to a fine suspension of ferric hydrate diminishing quantities of normal and syphilitic serums. He prepared a fine suspension of ferric hydrate by successive triturations of iron acetate in distilled water followed by prolonged boiling. By adding 0.225 gm. of iron acetate to distilled water he obtained an opalescent liquid of a yellow ocher color. He arranged a series of approximately forty test tubes, each one containing 2.0 c.c. of the colloidal suspension of ferric hydrate and 0.2 c.c. of a mixture of human blood serum and 0.9 per cent. sodium chlorid, the amounts of serum diminishing from left to right (Chart 2). After incubation at 37 C.



Charts 3, 4, 5 and 6.—Heavy line, normal serum; broken line syphilitic serum. Chart 3, 0.2 gm. of iron acetate in 250 c.c. of distilled water. Chart 4, 0.1 gm. of iron acetate in 250 c.c. of distilled water. Chart 5, 0.05 gm. of iron acetate in 250 c.c. of distilled water. Chart 6, 0.04 gm. of iron acetate in 250 c.c. of distilled water.

for forty minutes, it was observed that flocculation occurred in certain tubes, and then disappeared either abruptly or progressively in a certain number of tubes to reappear again in a later series of tubes, constituting thereby periodic zones of flocculation. After a certain point was reached in the dilutions of blood serum (*1* in Chart 2), no flocculation was produced.

By reducing the amount of iron acetate it was noted that the first zone (*B-E* in Chart 2) was moved to the right (Charts 3, 4, 5 and 6). Considering only this zone, then, a smaller quantity of serum was required to produce flocculation when the quantity of iron acetate was reduced. Conversely, if the least amount of serum which produced flocculation in this zone were taken and increasing amounts of iron acetate added to it, the curve of flocculation moved to the left. When the normal and syphilitic serums were compared it was noted that, with the lower concentrations of acetate, the curve of flocculation was always more to the left with the syphilitic serums. The constancy of these results indicated that there existed a definite difference in the stability of normal and syphilitic serums. Further, it was demonstrated that this difference in stability remained constant if one substituted other mineral substances in colloidal states for ferric

11. Vernes, A.: Les signes humoraux de la syphilis, Paris, 1913.

12. Vernes, A.: Compt. rend. Acad. d. sc. **165**: 769, 1917.

hydrate. By such substitution the periodic rhythmicity of flocculation was changed, but the variation between the two serums (normal and syphilitic) remained constant.

THE COLLOIDAL SUSPENSION

The next step in the experimentation consisted in determining the requirements for the proper physical state of the colloidal suspension and for the mixture and state of the serum so that, in certain zones, flocculation would always occur with syphilitic serum and never with normal serum. Mineral suspensions did not fulfil these requirements; therefore it was necessary to employ an organic colloidal preparation. As a result of extensive experiments with organic colloidal suspensions, Vernes [13] has shown that "a large variety of tissues furnish products soluble in alcohol which, after dilution with distilled water, give colloidal suspensions of the physical states required for the reaction." Horse heart was chosen, however, as the most suitable. The fresh heart was macerated in alcohol, desiccated, mixed with ethyl chlorid and absolute alcohol, distilled under negative pressure, and made up to the proper volume by the addition of alcohol so that its content was 0.15 gm. of the dried powder to the liter. The name perethynol was given to this preparation, and the abbreviation P used to designate it.

The second step in the experimentation with the colloidal suspensions consisted in reducing the perethynol to the desired colloidal state by dilution with distilled water or by the addition of an electrolyte to the distilled water. If perethynol is added drop by drop to distilled water, with constant shaking the result is a limpid suspension, the particles of which are in such a finely divided state as to be invisible under the ultramicroscope. If, on the contrary, the distilled water is added to perethynol in a similar manner, the result is a milky suspension. For the electrolyte it was found that solutions of the chlorid of sodium, calcium, cerium or tin might be employed; but sodium chlorid in a concentration of 0.4 per cent. was chosen as the most suitable and, for the preparation of the colloidal suspension, perethynol was added to 0.4 per cent. sodium chlorid in distilled water in the proportion of 1 part of P to 6.5 parts of sodium chlorid solution. Chart 7 illustrates the results with varying dilutions of sodium chlorid in the presence of normal and syphilitic serums, heated at 55 C. for twenty minutes. It will be noted that there is a common zone of flocculation for the two serums. It was necessary to reduce this to a minimum. Heating the serum at 55 C. for twenty minutes accomplished this by its effect in increasing the size of the granules and diminishing the flocculability. This resulted in restricting the common zone to narrower limits and at the same time made the results more clear-cut by increasing the differentiation between the serums.

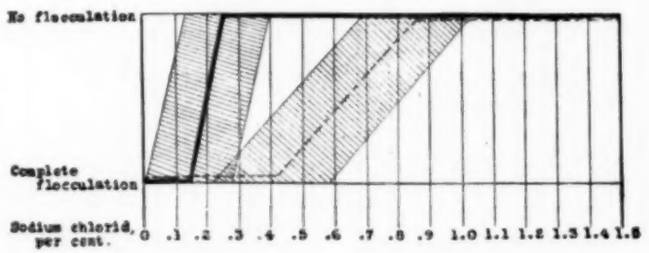


Chart 7.—Flocculation of syphilitic and normal serum with perethynol diluted with sodium chlorid solutions of varying strengths. Each tube contained 0.2 c.c. of serum heated for twenty minutes at 55 C., and 0.8 c.c. of 1:6.5 suspension of perethynol. Heavy line, normal serum; broken line, syphilitic serum.

The third step [14] consisted in perfecting the technic so that the results were easy to appreciate and indicated intermediate as well as extreme degrees of difference between normal and syphilitic serums. It was not possible to read the results directly, so here again it was necessary to employ another colloidal reaction of a different type than, but depending on, flocculation. "Let one imagine a substance which has the power of opposing flocculation (antiflocculant) and at the same time the power of producing hemolysis (hemolysin) but which loses its hemolytic property in direct proportion to the utilization of its antiflocculant property. Then instead of judging its stability directly by detecting the degree of flocculation, it is judged indirectly by detecting the degree of hemolysis. The latter is registered in degrees by the use of a colorimetric scale. Many substances are capable of playing this double rôle, but notably pig serum."

The amount of pig serum to be employed is determined by a preliminary titration. The elements on which the pig serum exerts its hemolytic power are red cells of sheep, which are likewise employed in an amount determined by a preliminary titration. They are made up in a 50 per cent. suspension with hypertonic saline solution after being washed and centrifugalized successively.

COMPLETE REACTION

The complete reaction is performed by introducing successively into test tubes similar to those employed for ordinary serologic work the ingredients named in the accompanying table. These ingredients, with the exception of the serum to be examined, are brought to a uniform volume of 0.8 c.c. by the addition of 0.9 per cent. sodium chlorid.

It is not possible to see any flocculation as a result of the first stage of the test either with normal or with syphilitic serum. Normal serum does not produce flocculation, and if the serum is from a syphilitic individual the pig serum prevents flocculation by virtue of its antiflocculant power. The total or partial utilization of the dispersing or antiflocculant power of the pig serum in the first stage of the reaction is revealed by the degree of hemolysis in the final stage. After centrifugalization, not only are the tubes containing normal serums red and those containing certain syphilitic serums free from any hemoglobin tinge, but there are intermediate degrees of color tints between the deep red and colorless which constitute a syphilitic index, said by Vernes to be of considerable importance in the control of treatment.

INGREDIENTS EMPLOYED IN THE COMPLETE REACTION

STAGE I	C.c.
Human serum	0.2
Perethynol (diluted 1:40 in 0.9% NaCl)	0.8
Pig serum (titrated quantity in 0.9% NaCl):	0.8

The tubes are placed in an incubator at 37 C. for one and one-quarter hours, at the end of which time they are removed and to each is added:

STAGE II	C.c.
Sheep cells (titrated and made up in 50% hypertonic saline solution)	0.8

The tubes are again incubated for one-half hour and then centrifuged.

CONCLUSION

A study of these syphilitic indexes constitutes a seromeasure of syphilis and indicates the efficacy of specific treatment.

13. Vernes, A.: Compt. rend. Acad. d. sc. **166**: 575, 1918.
14. Vernes, A.: Compt. rend. Acad. d. sc. **167**: 500, 1918.

The specificity of the reaction is vouched for by Vernes after an extensive application to a large number of patients suffering from various diseases, which application has been controlled by the clinical observations of Marie, Landouzy, Chatelin and others. The scientist who is responsible for this important discovery which, if confirmed, will revolutionize the laboratory diagnosis of syphilis, makes these unqualified assertions as to its reliability:

1. All syphilitic infection is accompanied by a pathognomonic modification in the stability of the blood serum and spinal fluid.
2. This pathognomonic alteration disappears under the influence of arsenical treatment, but each time that the treatment has been insufficient it reappears from the second to the fifth month, rarely from the fifth to tthe seventh.
3. When, following arsenical treatment, this pathognomonic alteration remains absent for eight months after the discontinuance of treatment and *the lumbar puncture is negative*, its reappearance has never been noted.

Through the courtesies of Professors Frederick Tilney and John H. Larkin, this new method is now under investigation in the neurologic department of Columbia University and in the pathologic department of the City Hospital. The results of these investigations will be the subject of later communications.

A TREATMENT FOR COLIC IN BREAST-FED INFANTS

C. G. GRULEE, M.D.
CHICAGO

There is scarcely any condition affecting the breast-fed infant which is more prevalent than colic. While in itself colic perhaps does not materially injure the infant organism, it is nevertheless of great importance because of the disturbance that it produces in the household; furthermore, many physicians do not realize the importance of breast feeding and are likely to use colic as an excuse for prematurely weaning the baby. This increases the danger to the infant and frequently causes more worry and anxiety to the parent than if the child had remained on the breast, even though colic had continued. For these reasons, aside from the humane aspect of relieving pain in these helpless babies, any treatment that will alleviate the suffering is a boon.

It should be emphasized that colic should primarily be regarded as a symptom of overfeeding. As a rule, this means overfeeding of the breast milk as a whole; but occasionally it means that the food which the child obtains is too rich in fat. Whether or not an excessive fat supply in the breast milk can be blamed for the appearance of colic is as yet an unsettled question, though there are many points that would seem to favor such an hypothesis. Colic is practically always accompanied by two symptoms on the part of the intestinal tract: pain and accumulation of gas. Evidently, these two symptoms are very intimately associated and are due to irritation of the intestinal wall with an accumulation of gas in the segment of the bowel isolated by localized cramping of the intestinal musculature.

The two bacterial processes that take place in the bowel are, of course, fermentation and putrefaction. Only one, fermentation, may be considered in this instance. There will, I think, be very little objection to the statement that colic is associated with fermentation within the intestinal canal.

Bahrdt and his co-workers have long since shown that fermentation products, to be irritating to the intestinal wall, must be other than those usually found. Lactic acid apparently is not irritating to the intestinal wall, but, on the other hand, the more volatile fatty acids are more definitely irritating. It is also well recognized that fermentation and putrefaction are to a large extent antagonistic processes; that is, the conditions which favor fermentation are inimical to putrefaction, and vice versa. With these facts in mind it would seem a logical procedure to attempt, if possible, first, to change the character of the fermentative processes within the bowel, and, secondly, to reduce fermentation by favoring putrefaction.

One of the bacterial organisms in the intestine which is most active in a fermentative way is the lactic acid bacillus. While there may be some question as to whether the lactic acid bacillus when introduced by mouth really will be of much value in changing the condition within the intestinal tract, the clinical experience of most pediatricians is that those foods which contain lactic acid bacilli in large numbers are of great benefit in many nourishment disturbances in artificially fed infants. I cannot, of course, support the extravagant claims of some clinicians as to the benefit to be derived from cultures of the lactic acid bacillus, but certainly there has been no greater advance in the artificial feeding of infants than that which came when buttermilk and allied foods were introduced. It would therefore seem to be a rational procedure to introduce cultures of lactic acid bacilli when we suspect not only excessive but abnormal fermentation, and therefore to attempt to direct this fermentation in such a way that the more volatile fatty acids will not appear in the same quantities. This, it would seem, could be accomplished, if we were able to increase the formation of lactic acid without increasing the quantity of fermentable material.

While in the lower bowel, that is, the large intestine, it is undoubtedly true that little or no effect on the condition of bacterial growth is to be produced by the introduction of protein by mouth, still it would seem altogether likely that increased introduction of protein by mouth would tend to lower fermentative processes in the small intestine. With these ideas in view, there were devised the methods of the treatment of colic about to be described.

Of course, preliminary to any statement concerning the treatment of colic, one must always bear in mind that, in the majority of cases, colic is a condition due not only to too much fat but usually to too great a quantity of breast milk. One can reduce the quantity of breast milk, of course, by shortening the length of the nursing period. This disproportionately reduces the quantity of fat in the food since, toward the end of the nursing period, the fat is several times as great relatively as in the early portion; but it is well known that many cases of colic do not respond to these simple methods, and one is frequently at one's wit's end to devise other ways of combating the difficulty. A treatment which has been repeatedly tried out and which has proved successful, not only in my practice, but also in that of my colleagues, is this:

Morning and evening, these children are given about 5 c.c. of the liquid culture of active lactic acid bacilli, and each breast feeding is preceded with a gram of powdered casein. There is, of course, no difficulty in administering the liquid

culture of the lactic acid bacilli; but powdered casein is hard to use. In the first place, it is quite difficult to get pure casein on the market. There are proprietary combinations of casein which can be used, and it is possible to obtain pure casein if sufficient search is made. The ordinary casein of commerce is, however, not to be used.

Even though the powdered casein is obtained, it is not at all soluble by ordinary means, and hence it is necessary to make a paste and place this on the back of the infant's tongue. If it is impossible to obtain the powdered casein, one may carefully skim milk and take the curd of the milk. The quantity of curd to be used before each nursing is approximately that obtained from an ounce of skimmed milk.

One advantage of this treatment is that ready cooperation of the mother is usually obtained when she learns that the treatment consists in giving the child some extra food. One should not expect that treatment of this sort will bring results at once; but it is unusual for a case of colic to resist this treatment for longer than a week or ten days, and usually the benefit begins to appear within twenty-four to forty-eight hours.

Another type of colic which is rather frequently encountered is that due to a deficient quantity of breast milk. If the infant has colic under these circumstances, the best food for supplementing will undoubtedly prove to be albumin milk.

104 South Michigan Avenue.

HOOKWORM AND OTHER INTESTINAL PARASITES IN ECUADOR

E. RAY ROYER, M.D.
Chief Surgeon, South American Development Company
GUAYAQUIL, ECUADOR

Can hookworm be stamped out entirely in an infected community? This question has been discussed, pro and con, by physicians in tropical countries and in the Southern states for many years, and today we realize that this much to be desired result may be accomplished only through the expenditure of much effort and money. Hookworm eradication, like prohibition, will never be a success so long as it is treated as a local option measure; and so long as unrestricted immigration to and from an infected community is permitted, hookworm disease will prevail. A hookworm campaign, to be eminently successful, must embrace all of an infected area or our efforts will avail little. At no place has this fact been more effectually demonstrated than at this camp where, for several years, an extensive campaign has been in operation; but because of the ever changing population usual in mining districts, hookworm is always with us.

I realize that this subject has received its full measure of publicity during the last few years, and I am writing, not with the idea of discussing the etiology, transmissibility or pathology, but merely to submit a few statistics and observations from an angle slightly different from the usual one. To many physicians, hookworm disease, being largely a tropical and semitropical problem, holds little of interest; but those whose lot is cast among the unfortunates for whom, in many remote districts, so little is being done, will not dismiss the subject lightly.

CHARACTER OF COUNTRY

A complete survey was instituted in January of the present year among the employees and dependents of employees of the South American Development Company, a gold mining corporation whose mines are located in Portovelo, Ecuador, near the larger town of Zaruma. This property is situated in the Andes Mountains, near the headwaters of the Tumbez River and 4 degrees south of the equator. The altitude is 2,000 feet, though employees come from altitudes ranging from sea level to 8,000 feet. The average maximum temperature is 80.21 and the average minimum, 67.93 F. The humidity is high during the rainy season (October to May), while the remainder of the year is usually dry. The natives, a goodly percentage of whom are ignorant, with a large admixture of Indian blood, as a rule go barefoot, live in hovels and subsist chiefly on a diet of rice, beans, plátanos and raspadura (brown sugar). However, many of the permanent employees of the company are better housed and eat at the company "fonda" or dining room, and these, of course, have a well balanced diet.

Portovelo and the company property, which covers an area of several square miles, is kept as sanitary as constant vigilance and the expenditure of adequate sums of money can make it. A large sanitary squad is kept busy eliminating the possible breeding places of mosquitoes, preventing soil pollution with hookworm larva and water contamination with amebas, inspecting latrines, and performing the various duties that fall to such a detail. All drinking water is distilled. Houses are well screened and have much modern plumbing. However, with a large native population that has little conception of sanitation, it is difficult to exclude and eliminate all transmissible diseases. Outside the camp limits even the outdoor toilet is practically unknown. It is hard for the North American to comprehend a country where even the towns have no toilet facilities and the odor in most of them is enough to sicken one. As all other sanitary efforts of the country are on a par with soil sanitation, it is easy to understand why hookworm disease, malaria, syphilis, tuberculosis and even leprosy flourish there.

CONTROL

This company maintains a hospital where not alone company employees and their families receive free medical treatment, but nonemployees from all over the country, even as far south as the Peruvian border, come for operations and treatment. As can be understood, many phases of disease are encountered which are seldom seen in more fortunate districts, where sanitation and preventive medicine have come into their own. Particular difficulty is experienced in hookworm and malarial control. Many of the employees are transient and others own or lease small tracts of land at some distance from the camp, and spend much of their time during the crop season away from the camp. During this absence, while in communities where hookworm and malaria are prevalent, they become reinfected. The applicants for employment average about 100 a month, and a continual hookworm and malarial survey is therefore rendered necessary. However, it has been possible to reduce hookworm disease to a minimum by a rigid enforcement of sanitary measures and frequent reexaminations and treatment; and as the employees of the company are more or less under control and are obliged to report for the necessary surveys, the results are more satisfactory and the data more dependable than among a similar number of residents of a community where they are not obliged to conform to such regulations.

OTHER INTESTINAL PARASITES

In conducting the recent survey, attention was early and particularly attracted to the heavy infestation with other classes of intestinal parasites, as Table 1, based on 1,109 cases in the preliminary survey, indicates.

TABLE 1.—RELATIVE PERCENTAGE OF VARIOUS CLASSES OF PARASITES

Class of Parasite	Positive	Negative	Per Cent. Positive
Trichocephalus dispar	937	172	84.5
Ascaris lumbricoides	872	237	78.8
A. duodenale and N. americanus	602	507	54.25
Oxyuris vermicularis	254	875	22.8
Strongyloides	212	897	19.1
Taenia (saginata and solium)	11	1,098	1.0
Endameba histolytica	10	1,099	0.9

METHOD OF DIAGNOSIS

In all cases the laboratory diagnosis was made by the glycerin-salt method of Barber. Specimens were prepared on clean slides and examined with low power unless detail was necessary. In negative cases, specimens were centrifuged and at least three slides were examined before the cases were so classified. In the tables submitted herewith the hemoglobin content and differential counts are omitted, as these would require exhaustive tabulation and it is thought that the findings would be of little general interest.

TABLE 2.—OCCURRENCE OF PARASITES

	Number	Per Cent.
No infestation with intestinal parasites	105	9.5
Infestation with one species	248	22.4
Infestation with two species	407	36.7
Infestation with three species	264	23.8
Infestation with four species	81	7.5
Infestation with five species	4	0.4

Table 2 is based on the number of different species harbored by a single individual as evidenced in the laboratory examinations of the 1,109 cases referred to above.

INFLUENCE OF ENVIRONMENT

Attention is invited to Table 3, which is peculiar in the fact that, contrary to tradition, those employed in the mine show a lower percentage of hookworm infestation than surface employees. This may be explained by the fact that the former, as a rule, have been longer in the company employ and have had the advantage of previous treatment. Applicants for employment show the highest percentage of infection. Those coming from the low country are almost 100 per cent. positive, while those coming from the higher altitudes are, of course, relatively free. It has also been found that in applicants who are infested with hookworm, the infestation is much more profound and the hemoglobin content of the blood is much less than in company employees who, even though infested, have had the benefit of previous treatment. In many instances it was demonstrated that, even though hookworm infestation was negative, when there were heavy infestations with two or more classes of intestinal parasites, notably *Trichocephalus dispar* and *Ascaris lumbricoides*, a severe degree of anemia and gastro-intestinal symptoms were in evidence.

TABLE 3.—RESULTS OF EXAMINATION OF STOOLS OF SIX HUNDRED AND SIXTY-SEVEN EMPLOYEES AND APPLICANTS FOR EMPLOYMENT

Hookworm	Positive	Negative	Total	Per Cent. Positive
Mine employees	103	102	205	50.3
Surface employees	172	133	305	56.66
Applicants for employment	104	53	157	66.2
Total	379	288	667	58.66*

* Average per cent. positive.

TREATMENT

In conducting the campaign for the eradication of hookworm and other parasites, the men were notified to report at the hospital at 7:30 a. m. They were instructed to eat no breakfast and to avoid the use of alcohol. As the survey embraced the general physical condition of the employees, including malaria, tuberculosis, syphilis and other quarantinable or transmissible diseases, and entailed a great amount of laboratory work, the number reporting was limited to fifteen daily. On reporting they were given from 30 to 48 drops of oil of chenopodium in divided doses. Freshly filled hard gelatin capsules, and the oil of a standard pharmaceutical concern, were used. The first dose was given at 8, the second at 9 and the third at 10 a. m. Three hours after the last dose they were given an ounce of magnesium sulphate, which was later repeated if four stools did not promptly result from the first dose of the purgative. As before stated, all employees were given a physical examination and the dose of chenopodium determined by their physique, estimated degree of infestation and anemia present. Such conditions as enteritis, nephritis and malaria were also considered in determining the dosage. Those under 18 years of age were given appropriate amounts. In advanced cases, the improvement that follows the first

Fig. 1.—A portion of the camp, and the topography of the surrounding country.

treatment is usually striking. The edema in the feet and legs disappears or is greatly reduced, the appetite improves, and mentality brightens. In patients examined two or three months after complete eradication, it will often be found that the pulse rate has become lower, palpitation and functional heart murmurs have disappeared, and the hemoglobin has increased from 15 to 30 per cent. A marked gain in body weight is not unusual.

UNTOWARD EFFECTS OF TREATMENT

Oil of chenopodium was used exclusively for the eradication of hookworm and was most satisfactory. In a few of the earlier cases treated, from 30 to 50 drops of chloroform were given in castor oil, following the chenopodium; but persistent vomiting followed this method of treatment in a large percentage of cases, and it was then difficult to administer another purgative. The latter method of treatment was therefore abandoned and the one first mentioned substituted. No further trouble was experienced, and the effectiveness of the treatment apparently in no way diminished. In a very few cases, slight toxic symptoms were noted, as evidenced by vertigo, abdominal pain and prostration; but these symptoms were transient, and no sequelae, except a moderate diarrhea in a few instances, were noted. Oil of chenopodium has been used in Curipamba hospital for the last four years, and there is no record of a fatality or serious sequelae which can be even indirectly ascribed to its use. It is thought that those patients who have a heavy infestation with low hemoglobin content and marked debility, due either to the uncinariasis or to other constitutional disease which accompanies it, should have smaller doses of the drug in the primary treatment. By this method the patient is relieved of a part of the worms, and subsequent treatment may be with reduced dosage and at sufficient intervals to permit recuperation on the part of the patient. As a surgical operation, performed late in the disease and when the patient has not sufficient resistance, may be "the straw that breaks the camel's back," so it is in the treatment of advanced cases of hookworm disease, and care in the handling of these cases is essential. In this hospital no treatment for hookworm is given to an outpatient who has not been under the observation of a member of the staff.

Fig. 2.—An average native house, in this case used as a schoolhouse.

REEXAMINATION

Within from two to four weeks after the preliminary treatment, the patients were again examined, and Table 4 demonstrates the effectiveness of the chenopodium treatment. It will be noted that two treatments rendered negative almost 98 per cent. of the cases.

CONTROL MEASURES INSTITUTED

Since the campaign was instituted, the sanitary measures of the camp have been more rigid, pamphlets containing educational propaganda were distributed, and all of the accepted prophylactic measures were inaugurated to reduce the chances of reinfection. At this time all applicants for employment are required to undergo a physical examination prior to employment. Those who are considered free from all transmissible diseases and are eligible for employment are issued a certificate of health, and it is hoped that the 1921 survey will show a marked decrease in hookworm and other diseases of a transmissible nature.

CONCLUSIONS

Hookworm disease is very prevalent in Ecuador. Both the Old and the New World varieties are found here. Its eradication has not been attempted except in a few small areas.

A hookworm survey should be elastic enough to include every native in an infected region, and sufficiently comprehensive to embrace all other classes of intestinal parasites, many of which produce symptoms similar to hookworm disease, including gastro-intestinal symptoms and anemia. This is particularly true of patients, harboring two or more classes of parasites, who do not have a properly balanced diet.

Trichocephalus dispar and *Ascaris lumbricoides* are found in a large percentage of the population, and diarrhea and subsequent anemia are not unusual sequelae.

Chenopodium oil has proved more effectual in the removal of intestinal parasites, with the exception of *Trichocephalus dispar* and the tapeworm family, than the older vermifuges. The former has been found more resistant to treatment than other species, and neither chenopodium nor other vermifuges or anthelmintics seem to exert a marked influence on their removal or destruction.

The fact that oil of chenopodium acts as a vermifuge on other classes of parasites is an economical factor in its favor, saving in many instances the necessity of administering other drugs for their removal. The older method of treatment in Curipamba hospital consisted in the administration of santonin and calomel for the removal of other classes of intestinal parasites, previous to the chenopodium treatment, but that procedure has been found superfluous in the eradication of *Ascaris lumbricoides* and *Strongyloides*.

Untoward symptoms and toxic action ascribed to the use of chenopodium oil are due, in many instances, to improperly selected cases. Each patient to whom

the oil is administered should come under the observation of the prescriber and dosage determined after a physical examination.

A classical symptom often mentioned in textbooks as occurring in hookworm disease, i. e., a triangular spot, or spots, on the dorsum of the tongue, appearing as though a pen had been wiped on it, is of little value as a diagnostic sign. In the series of cases reported, this sign was not observed in a single instance.

TABLE 4.—RESULTS OF TREATMENT

Preliminary Survey (hookworm):	
Total positive	602
Total negative	507
Total examined	1,109
Results Following First Treatment (positives in preliminary survey):	
Positive	74
Negative	368
Unable to locate	160
Total	602
Results Following Second Treatment (positives after first treatment):	
Positive	10
Negative	55
Unable to locate	9
Total	74

Is there a specific toxin generated in pulmonary tuberculosis which is inimical to the development of hookworm in a host so affected? An interesting feature, and perhaps an unusual one, was the fact that while the initial survey of employees revealed an average infestation of 58.66 per cent. with hookworm, in forty-six cases of pulmonary tuberculosis, hookworm infestation could not in a single instance be demonstrated, though the pulmonary condition apparently exerted little influence on other species of parasites, which were present in about the usual number. This may be merely a coincidence, but it is certainly worthy of further investigation, as a review of the available literature on either hookworm disease or tuberculosis gives no enlightenment on the subject.

SUPPURATING MYOMA UTERI

REPORT OF CASE WITH A BRIEF REVIEW OF THE LITERATURE

J. W. NIXON, JR., M.D.
SAN ANTONIO, TEXAS

An unusual complication of myoma uteri was recently observed in the surgical clinic of Dr. John B. Deaver, at the Lankenau Hospital, Philadelphia. In the wide experience of this surgeon, comprising more than 1,200 operations for uterine fibroids (at this hospital alone), this was the first instance of its kind encountered. With this evidence of the infrequency of the complication a report of the case seems warranted.

REPORT OF CASE

History.—Mrs. M. C., aged 20, negress, was admitted to the Lankenau Hospital, May 4, 1920, complaining of sharp pains in the lower abdomen. She said she had noticed a mass in that region for the last two years, which had gradually increased in size but had not caused any discomfort or in any way interfered with menstruation, until about one month before when she missed the normal menstrual period. Two weeks before a sharp pain had developed in the right lower abdomen, later becoming generalized over the entire abdomen but remaining more severe in the right lower quadrant. While there was no nausea or vomiting, there was a rise in temperature accompanied by night sweats several days before admission.

The menstrual history was normal except for the period missed one month before. She had had marked leukorrhea with frequent and burning urination at the beginning of the leukorrhea two years before. She had no children, and had had no miscarriages. There were indications of gonorrheal infection two years before, which, however, was not at that time confirmed by bacteriologic examination. The social history was negative.

Physical Examination.—The patient, a well nourished negress, was slightly delirious, with a hot, dry skin. The head, neck and thorax were negative. A rounded, slightly movable, firm and somewhat tender mass was present in the lower abdomen. The tumor, which was nonfluctuating, was about the size of a six months' pregnancy and seemed to extend into the pelvis. Vaginal examination revealed slight leukorrhea, the cervix normal, and the pelvis filled with a tender, hard mass evidently attached to the posterior surface of the uterus. The urine was negative; the blood count revealed a leukocytosis of 24,100. The Wassermann reaction was negative. A tentative diagnosis of myoma uteri was made.

Fig. 1.—The uterus laid open, showing probe within the uterine cavity. The roughened areas represent the burrowing pus cavities.

Operation.—This was performed, May 6, 1920, by Dr. John B. Deaver. When the abdomen was opened, an inflammatory mass appeared at the fundus of the large, fibroid uterus, about the size of the head of a full term fetus, to which the great omentum was adherent. A subtotal hysterectomy was performed. Incision of the removed specimen revealed an irregularly pocketed pus cavity at the fundus of the uterus, containing about 0.5 liter of greenish pus. Both tubes and ovaries were normal. Bacteriologic examination of a smear taken from the infected fibroid disclosed many pus cells, a few gram-negative organisms, and intracellular diplococci, indicative of gonococci. Recovery was interrupted during the first few days following operation by toxic symptoms, which, however, soon disappeared. On the thirteenth day after operation the patient developed a fecal fistula which had closed spontaneously by the twenty-seventh day, when she was discharged in good condition.

Pathologic Report (by Dr. Stanley P. Reimann).—The specimen was a myomatous uterus, the total mass measuring 22 by 17 by 15 cm. There were five myomas. The largest,

roughly pear-shaped and 15 cm. in length, sprang obliquely from the upper right cornu to which it was blended; the smaller tumors measured from 2 to 5 cm. and sprang from the opposite side of the uterus. The specimen was amputated supracervically. The endometrium was pale and covered with tenacious mucopus. The largest myoma in its upper and in half of its lateral aspects showed irregular, ragged cavities which contained more or less thick greenish yellow pus. These cavities penetrated the tumor mass to distances of from 6 to 7 cm. and burrowed their way irregularly in all directions. No direct communication was found with the uterine cavity, although the abscess cavities burrowed to within 0.5 cm. of it. The other tumors showed the ordinary gross appearance of fibroleiomyoma. Smears from the purulent centers of the cavities showed a gram-negative, intracellular diplococcus, resembling morphologically the gonococcus, which, however, failed to grow on ordinary culture mediums.

Histology.—The endometrium showed irregularity in the contour and size of the glands. Many were filled with mucoid material, desquamated cells and débris, and a few with blood pigment. The matrix showed a small amount of lymphocytic infiltration, and the myoma cavities an excess of fibrous tissue with very little smooth muscle. The walls of the abscess cavities were lined with partially necrotic fibrous tissue, richly infiltrated with pus cells. The reaction extended to varying depths and consisted of intense, active congestion, pus cells, edema and small amounts of fibrin.

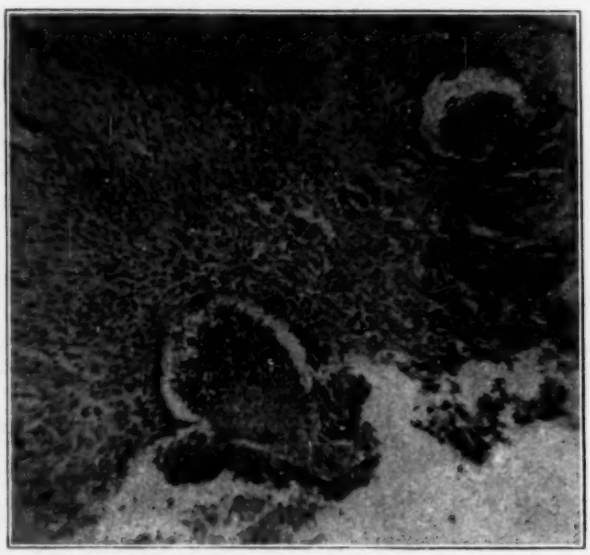


Fig. 2.—Wall of an abscess cavity, showing a dilated vessel and the cellular (pus) infiltration.

COMMENT

While some authorities class suppuration among the degenerative changes of uterine fibroids, the classification can hardly be said to be accurate if by suppuration is meant the invasion of the tumor by pyogenic organisms of sufficient virulence to produce the abscess. The confusion of terms may be due to the fact that in many reports suppuration is taken more or less for granted, without a bacteriologic or histologic study, and also to the frequent association of gangrenous degeneration and abscess formation.

Statistics from various sources confirm the rarity of the condition. Guéry,[1] in 1901, was able to collect only forty-seven instances of genuine, or, as he terms them, primary suppurating fibroids, that is, unassociated with other types of degeneration. Messa[2] in fifty cases, LeBec[3] in fifty-seven, and Noble[4] in 218 failed to observe suppuration in any. Lauwers[5] noted the phenomenon in 0.5 per cent. of his cases. Basso[6] in 605 myomas observed only one instance of suppuration; while Kelly and Cullen[7] among 1,428 uterine myomas report only eleven cases of suppuration.

On the other hand, Martin[8] asserts that suppuration occurs in 5 per cent., and Cullingworth,[9] in 15 per cent. of cases of myoma uteri. These figures are evidently too high, and probably are the result of the inaccurate classification, already referred to, which includes necrosis, gangrene and other forms of degenerative changes.

While a uterine fibroid may become infected at any time, infection is most likely to take place during active sexual life, that is, between the twenty-fifth and forty-fifth year. The change is noted at varying periods after the first symptom of tumor formation is apparent. In some instances, as in our case, two years elapsed before suppuration set in, and in others, the period extended from four to five years, and even ten, twenty or forty years, as in cases reported, respectively by Morestin,[10] Michon,[11] Routier,[12] Hartmann and Mignot,[13] Vautrin[14] and Carter.[15]

The myoma becomes infected as a result of impaired circulation which activates the bacteria latent in the tumor. In the order of frequency, the factors leading to infection of a fibroid are pregnancy; trauma from a surgical or obstetric procedure, in the interstitial variety by direct extension of infection from an endometritis; torsion of the pedicle, especially in the subserous tumor, which has a tendency to develop adhesions to neighboring organs, such as the intestine, the bladder and principally the tubes and ovaries; chemical irritation, such as the administration of ergot and other drugs destined to contract the uterus, as in the case reported by Basso; and mechanical irritation, in the use of the roentgen ray and radium.

Bacteriologic studies reveal the fact that there is no type of organism peculiar to suppurative myomas. It is nearly always the same as that present in the neighboring organs from which the infection has in all probability been derived. Accordingly, one would naturally expect to find streptococci, staphylococci, colon bacilli and gonococci. All of these organisms, in fact, have been recovered from suppurating myomas with the sole exception of gonococci. The case under consideration, therefore, appears to be a unique example of its kind. The history of specific infection, as well as the presence of a chronic endometritis, as demonstrated in the pathologic study, and the finding of the diplococcus in the bacteriologic examination of the pus are, I believe, evidence in support of this statement.

1. Guéry, A.: Etude sur la suppuration des fibromyomes utérins, Thèse de Paris, 1901 (gives complete bibliography).
2. Messa, G. E.: Contributo allo studio delle trasformazioni regressivi (degenerazione benigne) dei fibromiomi dell'utero, Ann. di ostet. **2**: 549, 1912.
3. LeBec, cited by Piquand, M. G.: Les dégénerescences des fibromyomes de l'utérus., Thèse de Paris, 1905.
4. Noble, C. P.: The Complications and Degenerations of Fibroid Tumors of the Uterus, Brit. Gynaec. J. **17**: 170, 1901-1902.
5. Lauwers: Complications des myomes, Bull. Soc. belge de gynéc. et d'obst. **9**:49, 1897.
6. Basso, G. L.: Sulla suppurazione dei fibromi uterini, Ginecologia **11**: 1, 1914.
7. Kelly, H. A., and Cullen, T. S.: Myomata of the Uterus, Philadelphia, W. B. Saunders Company, 1909.
8. Martin, A.: Cited by Guéry (Footnote 1).
9. Cullingworth, C. J.: Cited by Guéry (Footnote 1).
10. Morestin, P.: Cited by Basso (Footnote 6).
11. Michon: La suppuration des fibromes utérins, Gynécologie **14**: 9, 1910.
12. Routier: Cited by Basso (Footnote 6).
13. Hartmann and Mignot: Suppuration des fibromes interstitiels, Ann. de gynéc. et d'obst. **45**: 425, Philadelphia, W. B. Saunders Company, 1896.
14. Vautrin: Enorme fibrome suppuré de l'utérus, Rev. méd. de l'est. **40**: 479, 1908.
15. Carter, C.: Degeneration and Cretification of Fibroid Tumor of Uterus, Tr. Obst. Soc. London, **13**: 167, 1871.

The symptoms of suppurating fibroids are not distinctive, except that the pain is likely to change from the usual dull, dragging pain to that of a sticking character. The process is evidently not sudden, as is indicated by the time elapsing between the first signs of fibroid and the development of the infection. Diagnosis, therefore, is not always possible. In some instances there may be a rapid increase in the size of the tumor accompanied by local tenderness, fever, night sweats and possibly a discharge of pus from the vagina, together with emaciation and signs of general septicemia. A high leukocyte count in connection with these symptoms in the presence of what appears to be a fibroid should suggest a suppurating tumor, since it is well known that leukocytosis is not a feature of the ordinary myoma uteri.

The prognosis of suppurating fibroids is grave, and its gravity is further increased by the complications that may arise, as well as by the depleted condition of the patient when she comes to operation. A study of the literature shows that these infected fibroids frequently rupture into the peritoneal cavity; or they may break away from the pedicle of the tumor and are then found free in the abdominal cavity; or they may rupture through the posterior vaginal wall, the intestine or the bladder; or they may become organized and inspissated. These possibilities naturally add to the mortality, which is high.

Basso [6] estimates the death rate at 50 per cent.; Berger [16] reports twenty-three cases with sixteen deaths, or 70 per cent. mortality. His cases, however, were all related to pregnancy and parturition, which contribute to the gravity of the condition. Kelly and Cullen [7] reported eleven cases with three deaths, a mortality of 27 per cent. This reduction is no doubt due to improvement in surgical technic and treatment.

The treatment of suppurating myomas is essentially surgical, and too much emphasis cannot be laid on the importance of early surgical interference before complications have a chance to develop. Prognosis also is naturally more favorable if the tumor is small and nonadherent and can be removed in toto without danger of rupture and spread of its contents during operation.

In case of pregnancy complicated by myoma uteri, it is important to lay more than usual stress on aseptic precautions during pregnancy, at parturition and afterward, and to remove the fibroma as early as is safe after the termination of pregnancy.

As a rule, hysterectomy, total or subtotal, is the operation indicated, with suitable drainage.[17]

16. Berger, G.: Suppuration des fibromes au cours de la puerpéralité, Thèse de Paris, 1907.

17. In addtion to the references already given, the following will be found of interest:
Blacker, G.: A Suppurating Fibroid Tumor of the Uterus, Tr. Obst. Soc. London **49**: 100, 1907.
Bonfils, E.: Contribution a l'étude de la suppuration des fibromyomes de l'utérus, Thèse de Montpellier, 1910.
Delage, J., and Ganjoux, E.: Sur la suppuration des fibromes de l'utérus, Gaz. d. hôp. **80**: 591, 1907.
Van Orden: Suppurating Fibroid Due to a Criminal Abortion, Am. J. Obst. **68**: 99, 1913.

AN OPERATION FOR TUBERCULOSIS OF THE WRIST

LEONARD W. ELY, M.D.
SAN FRANCISCO

Ten years ago, as the result of careful clinical and laboratory investigation, I laid down as a cardinal rule that the proper way to cure a tuberculous joint in the adult was to destroy it.[1] Up to that time the only theory of operation was to remove as much tuberculous tissue as possible.

Since my original article was published, I have continued my investigations, and on numerous occasions have called attention to this cardinal rule, emphasizing and amplifying it as time went by.[2] The operation described here shows how the theory may be applied successfully to a most intractable form of joint tuberculosis.

THE OPERATION

A longitudinal incision, 8 or 10 cm. long, runs from the middle of the third metacarpal bone to a point about 4 cm. proximal to the articular surface of the radius, passing over the wrist at about its middle. The incision is deepened, and the extensor tendons are retracted. The periosteum over the proximal end of the third metacarpal and that over the distal end of the radius is incised for about 2 cm., and stripped back.

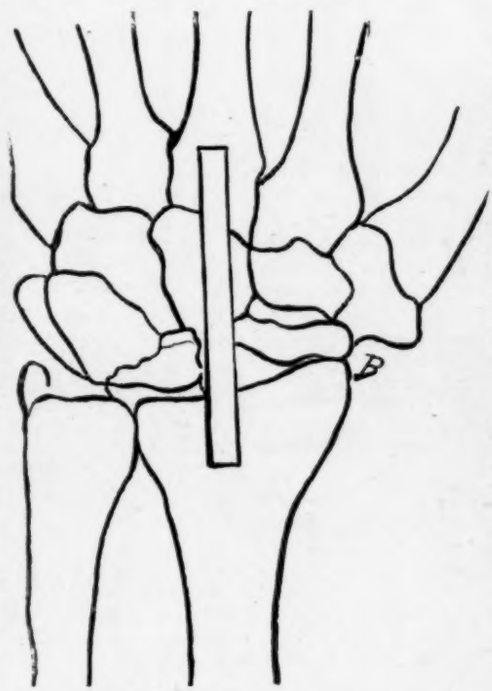


Fig. 1.—Graft running between base of third metacarpal and end of radius.

With a motor saw, two parallel cuts about 5 cm. long and 5 mm. apart are made, through the wrist joint, into the radius and the third metacarpal, running into each bone for the distance of a centimeter. A graft is removed from the anteromedial cortex of the tibia measuring about 4 by 0.5 cm., and is fitted into the groove. When the wrist is forced into superextension the graft locks fast. The graft is sutured in place, and the skin is closed. After the application of a sterile dressing the forearm and hand are put up in plaster of Paris, with the fingers and thumb free, and with the wrist in superextension. The superextension not only locks the graft in place, but improves function in the hand when the wrist becomes ankylosed. It also serves the purpose of approximating the radius and metacarpus. In a diseased wrist it brings them almost into apposition.

Considerable swelling of the fingers may be looked for after the operation, but need cause no anxiety if the plaster dressings have been slit up.

The plaster gauntlet remains on for about three months, the patient moving his fingers and thumb as much as possible meanwhile.

The result is a useful hand, possessing as much rotation as before the operation, and with excellent power in the fingers and thumb.

1. Fly, L. W.: Surg., Gynec. & Obst., **10**: 561, 1910.

2. Ely, L. W.: Joint Tuberculosis, New York, William Wood & Co., 1911; California State J. Med. **13**: 286, 1915; Med. Rec. **78**: 147, 1910; Berlin klin. Wchnschr. **50**: 256, 1913; ibid. **47**: 2062, 1910; New York M. J. **6**: 783, 1915; New York State M. J. **10**: 273, 1910; The Three Rules of Treatment in Adult Joint Tuberculosis, J. A. M. A. **58**: 534 (Feb. 24) 1912; Diseases of Bones and Joints, New York, 1910.

REPORT OF CASES

Case 1.—A. W., aged 12 years, schoolboy, with a tuberculous family history, was brought to the Stanford Clinic, Aug. 26, 1916, on account of pain in his left wrist, which had been present for two weeks. The examination of the joint was negative, and an external application was prescribed. Two months later he was brought again for the same complaint, and a tentative diagnosis of tuberculosis was made by the attending surgeon, though the history does not reveal the data on which the diagnosis was made.

November 4, a roentgenogram disclosed "marked demineralization of the left carpal bones," and the diagnosis read "probable tuberculosis." A plaster-of-Paris splint was applied. November 25, the first mention of swelling was made. From this date forward the immobilization was continued, reinforced by heliotherapy.

June 8, 1918, plaster of Paris was discontinued.

Aug. 7, 1918, there was no pain. The wrist was rather swollen, and the hand was adducted. There seemed to be some active inflammation. A fair amount of flexion and extension was present, about 40 degrees, and rotation was virtually normal. A new plaster-of-Paris gauntlet was applied with the thumb and fingers free, and the wrist in slight superextension.

The plaster-of-Paris gauntlets were continued for another year.

Aug. 25, 1919, operation, as described above, was performed. The carpal bones were found irregular and friable. The radius could be cut with a knife, and the synovial membrane was thickened. A plaster-of-Paris gauntlet was applied, with the wrist in superextension. The material removed from the wrist was ground up and injected into a guinea-pig. The results were positive for tuberculosis. Microscopic examination of the bones and soft parts did not reveal tuberculous tissue. Immobilization was continued until November 25, the patient meanwhile improving in his general condition.

Fig. 2 (Case 1).—Anteroposterior view nine months after operation. The graft has increased decidedly in thickness, and its structure blends with that of the receiving bone.

May 22, 1920, the patient was seen at his place of business, where he is working as a bank clerk. The wrist was apparently well, and had been since the last note. It was firmly ankylosed in an attitude of slight superextension. Flexion and extension were absent; rotation was perfect. The patient swam and indulged in any exercise he fancied. He was now 16 years of age, and in excellent physical condition.

July 2, bony union was evident. The wrist apparently was well. The roentgenogram disclosed fusion of the graft with the receiving bones. The patient was in excellent physical condition.

Fig. 3 (Case 2).—Anteroposterior view taken about nine months after operation. As in Case 1, the graft has increased decidedly in thickness, and its structure blends with that of the receiving bone.

Case 2.—M. S., a woman, aged 22, a laundry worker, complained of a sore wrist Sept. 8, 1919, which she had had for nine years and which she attributed to a fall. Examination revealed slight bowing of the lower end of the forearm. Motion was markedly restricted in flexion, extension and supination, and moderately in pronation. The hand was atrophied, the finger motions were free. A roentgenogram revealed "old destructive arthritis."

September 13, operation, as described above, was performed. The saw slipped and lacerated badly the common extensor tendons of the fingers. They were united with silk sutures. Material from the wrist was sent to the laboratory for examination.

September 14, edema and cyanosis of the fingers necessitated slitting the gauntlet, and the superextension was lost.

The wound healed by first intention, but the pain and disability in the fingers, in spite of early and persistent motion, were so severe that two operations were necessary on the damaged tendons. At the first, Dec. 15, 1919, they were found closely adherent to the surrounding structures. They were dissected free and were enclosed in a tube of fascia lata. Subsequent active and passive motions were begun early.

Feb. 23 1920, the tendons were again dissected free. They proved tightly adherent to the fascial tube, and this to the carpus and the subcutaneous tissues. It was dissected off.

February 24, active and passive motions were begun.

February 25, electrical stimulation of the common extensor was begun.

The active and passive motions and the electrical stimulation were kept up for two months with good results.

June 24, the patient said the wrist was well. She had no pain, and did heavy work. The joint was stiff in line with the forearm. Supination was slightly restricted, pronation somewhat more so. The arc of rotation was approximately

half normal. Motion in the interphalangeal joints was normal, but in the metacarpophalangeal joints was somewhat restricted. The thumb was free. The limitation was apparently due to adhesions of the tendons with the deep tissues. There was marked bony thickening at the site of the graft. A roentgenogram was taken.

The guinea-pig test with material from the wrist was negative. Microscopic examination of some of the bone removed disclosed typical bone tuberculosis.

PARAFFINOMA AND WAX CANCER*

BENJAMIN FRANKLIN DAVIS, PH.D., M.D.
Surgeon, Academy of Clinical Medicine
DULUTH, MINN.

REPORT OF CASE

A woman, aged 30, referred by Dr. Oliver Ormsby in June, 1918, had become annoyed in June, 1916, by a couple of small moles of approximately symmetrical location on each cheek. These had been removed by electrolysis, leaving small, depressed scars. Paraffin had then been injected by a so-called beauty specialist to fill out the depressions; the immediate results were so pleasing that several small wrinkles on each cheek had also been filled out at subsequent sittings. In about a year the site of the injections became slightly swollen, indurated, and assumed a dusky red color. The induration and discoloration gradually spread to involve the greater part of each cheek lying between the angle of the mouth anteriorly, the zygoma above, the anterior border of the masseter muscle posteriorly, and the mandibular margin below. It became impossible to open the mouth more than one-half inch. The induration transformed the smooth convexity of the cheeks which had

Fig. 1.—One week after the first step of the operation on the right cheek; the arm held in place by a plaster cast. On the left cheek the paraffinoma, ulcerating at a point just beneath the zygoma, is well seen.

immediately followed the paraffin injections into pronounced concavities. At frequent intervals the lesions became the seat of mild suppurative processes associated with the extrusion of minute particles resembling paraffin; these would leave small ulcers which would crust over, heal, and again break down, so that there was an almost constant discharge from areas involved. The patient became adept in the art of making up; and by filling the depressions with a half inch of some cosmetic she was able to present passable features; once made up, however, any disturbance of the immobilization of the face affected the complexion disastrously.

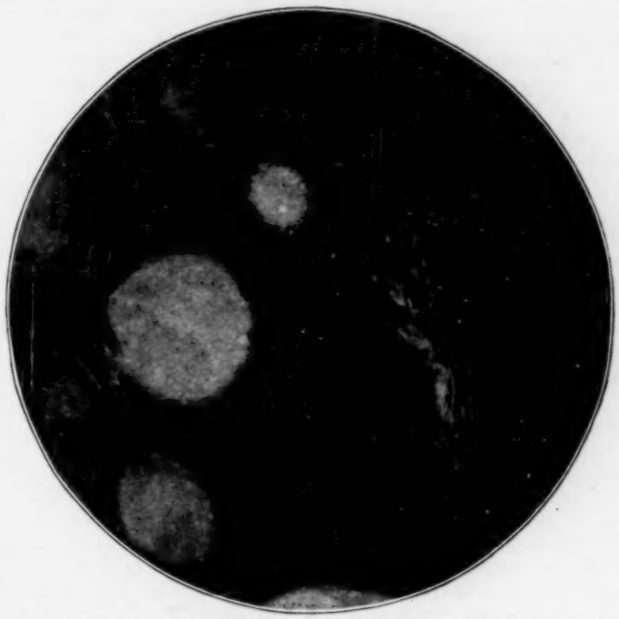


Fig. 2.—Section from a paraffinoma. Note cellular infiltration about islands of paraffin and foreign body giant cells.

When first seen by Dr. Ormsby, the condition was as just described. The blood Wassermann test was positive. The patient was referred to me for surgical treatment. In view of the positive Wassermann test it was deemed wise to defer operation pending the results of vigorous antisyphilitic treatment. The Wassermann test became negative in three months; six months later the patient entered the Presbyterian Hospital of Chicago for surgical treatment. There had been no appreciable local change resulting from the antisyphilitic treatment.

There were three reasons for operating: to (1) reduce disfigurement; (2) increase the mobility of the mandible, and (3) forestall epithelioma. The treatment adopted was complete excision of involved tissue and substitution of a flap of skin and fat from the arm, one side at a time. This involved four different operations. At the first operation, the lesion on the right cheek was excised, the dissection being carried to the mucous membrane at one point; the right arm was brought up over the head and a pedicled flap from the arm stitched into the cheek defect (Fig. 1). The position of the arm was maintained by a plaster cast for two weeks when, under gas-oxygen anesthesia, the cast was removed, the pedicle of the flap cut, and the arm brought down to the side. The stump of the transplant on the cheek was then sutured in position. Ten days later the procedure was repeated on the opposite side. Healing in each instance was uneventful. The result when the patient was last seen, that is, eight months after operation, was a decided success from the standpoint of each of the three objectives of treatment.

CLINICAL PATHOLOGY OF SKIN LESIONS FROM PROLONGED EXPOSURE TO PARAFFIN

The skin lesions resulting from prolonged exposure to paraffin vary with the susceptibility of the individual to paraffin irritation, and inversely with the degree of purity of the paraffin. In 1914,[1] in summarizing the

* From the Department of Surgery of Rush Medical College, Chicago.

1. Davis, B. F.: Paraffin Cancer, J. A. M. A. **62**: 1716 (May 30) 1914.

lesions as found among men employed in a large plant near Chicago engaged in the manufacture of paraffin, I said:

Skin lesions attributable to their occupation were found only in the men employed in the press-rooms. Here the crude paraffin is run into great presses and the oils, "pressed distillate," expressed. The paraffin remaining in the press, so-called slack wax, is scraped off by men who use spade-like instruments and usually work bare-handed with sleeves rolled up above the elbows. During this process the men become pretty thoroughly smeared with the pressed distillate. The work is done at room temperature. During the first few months of employment in this department the majority of workmen suffer from "wax-boils" affecting any portion of the skin, but particularly the arms and neck. The susceptibility to this trouble, which appears to be a species of furunculosis, may disappear in time to a very large extent. A certain proportion of the workmen, however, will develop still further lesions. Thus, after a number of years, pigmented spots make their appearance; some of them are scaling and psoriatic, others merely rust-colored areas varying in diameter from a few millimeters to a centimeter and a half; these may be followed by wart-like growths of slow development amenable to various common remedial measures; finally, true epithelioma may appear. These changes are seen only in those employees who come into intimate and nearly continuous contact with the "pressed distillate" for a period of years. Waxboils and the subsequent lesions are unknown among the workers in the finished paraffin and among the men who handle the crude oil.

Fig. 3.—Section from edge of ulcerating area in experimental paraffinoma in a dog. Note the apparently infiltrating columns of epithelial cells. In the center are several mitotic figures.

As the constant presence of crude paraffin on the surface of the skin causes a chronic inflammatory reaction in susceptible individuals, so the higher grades of paraffin, injected into or beneath the skin, appear to exert a similar influence on the tissues with which they come in contact. There must be an individual predisposition on the part of the patient here also, since the majority of people into whose skin paraffin is injected do not develop paraffinomas; on the other hand, the affliction is common enough to clothe the procedure of paraffin injection with distinct risk.

Paraffinoma is a chronic inflammatory process involving skin and adjacent subcutaneous tissues, characterized clinically by the development of reddish purple, indurated masses, painless, not tender, persistent, not subject to ulceration as a rule, and ordinarily benign but occasionally becoming malignant. Microscopically, there appear numerous oval or circular clear spaces surrounded by fibroblasts with a marked sprinkling of endothelial and plasma cells; frequently the clear spaces, doubtless spaces from which paraffin has been dissolved in the process of sectioning, are the seat of plasmodial masses of endotheloid cells distinctly similar to foreign body giant cells (Fig. 2). In a few instances malignant degeneration has been discovered in paraffinomas.

The chief objection to paraffinoma is the terrible and almost ineradicable disfigurement which it produces. The only treatment of value is complete extirpation of the paraffin-bearing tissue and plastic repair of the resultant defect.

Experimentally, much has been accomplished from the standpoint of the production of lesions in animals similar to those that are seen in pathologic conditions in man.

From the standpoint of etiology and therapy, nothing has been added by animal experimentation to the information at hand as the result of clinical study. It is easy to produce granulomatous masses in dogs and rabbits by the subcutaneous injection of pressed distillate and slack wax, and occasionally an overgrowth of epithelial cells of an apparently infiltrating type may result. I have seen this occurrence once in a dog at the edge of an ulcerating paraffinoma which had developed in about six weeks as the result of the daily injection of small quantities of slack wax (Fig. 3). Yamagiwa and Ichikawa[2] produced epithelioma-like growths, only three of an infiltrating character, however, on thirty-two of fifty-two rabbits' ears systematically painted with tar for several months; these lesions appear to resemble closely the cutaneous disturbances seen in paraffin workers and the lesions produced in rabbits and dogs by prolonged exposure to the irritation of crude paraffin. It seems probable that this is another expression of the scarlet R reaction on which Fischer based his atraxine theory of the cause of cancer, and is probably explainable in the same terms. Thus, Bullock and Rodenburg[3] concluded "A Study of the Scharlach R Reaction" in these words:

The scharlach R reaction is a reparative process, acting under conditions of prolonged disturbance of mechanical equilibrium between epithelium and connective tissue, and dependent in its inception and continuation upon irritation and cell death. The contact with epithelial cells of a chemical irritant of slow absorbability and relatively mild toxicity is indispensable for the production of the reaction. The chemical owes its power of inducing epithelial proliferation, not to its solubility in lipoids, but to its ability to cause continuously a certain amount of tissue death. Cessation of epithelial proliferation occurs before the absorption of the foreign substance, and indicates the return of equilibrium after the performance of the new task imposed upon the tissue. The character and extent of the reaction are independent of the amount of blood circulating in the tissue. The degree of reaction depends on the surface area of epithelium exposed to the irritant. Scharlach R exerts no specific stimulating action on epithelial cells. The atraxine hypothesis of Fischer is untenable. Metaplasia is a frequent occurrence in the tissues of the ear, breast, prostate and lung after the injection of a chronic irritant of the type used in our experiments.

Experimentally, it is exceedingly difficult to carry the work on the relation of chronic irritation to cancer beyond the stage of chronic inflammation, possibly

2. Yamagiwa and Ichikawa: Mitt. a. d. med. Fakult. d. K. Univ. Tokyo **15**: 243-395 1915.
3. Bullock and Rodenburg: J. M. Res. **33**: 53, 1915.

because of the relative brevity of the duration of the experiment; clinically, we commonly see the relationship verified.

SUMMARY

We may say that paraffinoma is a chronic granuloma produced by prolonged, continuous exposure of susceptible tissues to the irritation of paraffin. Disfigurement, deformity and interference with function, if the lesion is in a region requiring motility, are the chief types of disability resulting; cancerous degeneration, "wax cancer," is an occasional intruder. Complete extirpation of the involved tissue is the treatment of choice. Paraffinoma probably is not the expression of a specific growth-inciting property of paraffin, but is rather the result of the long continued action of a low grade chemical irritant.

Academy of Clinical Medicine Building.

EMPTYING A CHRONICALLY DISTENDED BLADDER

DESCRIPTION OF A SIMPLE DEVICE *

CORNELIUS VAN ZWALENBURG, M.D.
RIVERSIDE, CALIF.

It has been a surprise to me how often men will go for months and years with a distended bladder. They will suffer a continuous overflow and live constantly with a back pressure on the kidneys for a surprisingly long time before sufficiently serious complications intervene to drive them to a physician or surgeon.

The problem of relieving the urinary tract from this pressure without bringing on an attack of anuria has been the subject of discussion ever since prostatectomy became a comparatively common procedure.

A common practice is to draw off a few ounces every few hours and gradually empty the bladder. This is a haphazard method which always leaves one in doubt as to the amount of urine and consequently the amount of pressure remaining in the bladder. A serious objection to this frequent catheterization is the irritation of the delicate mucosa of the urethra and bladder, unimmunized as it is, with its attendant shock and nervous upset.

REPORT OF CASE

When Mr. W. B., aged 78, came to me a few months ago suffering from a distended bladder of three years' standing, it occurred to me that a plan might be carried out easily whereby we might know at all times just how rapidly the pressure was being lowered, and hence we might be able to gage the discharge within perfectly safe bounds.

With this in view I placed the ordinary catheter and retained it by the usual method with adhesive straps. With a glass connecting tube I joined this to a rubber tube about 5 feet long, attaching the other end to an ordinary douche can, which I hung upon a standard by the side of the patient's bed. By raising and lowering the douche can I could regulate the pressure to a nicety. In adjusting the height of the can I found that at 12 inches above the base of the bladder there was a slow discharge of urine into the can. I left it at this point from 5 p. m. until morning, when it was lowered to 10 inches. Instructions were to empty the can whenever it contained 2 inches of fluid. Enough of a 1:4,000 solution of mercuric chlorid was kept in the can to prevent infection from possible inflow and outflow of the urine. The can was gradually lowered every four to eight hours, until at the end of forty-eight hours it reached a point 6 inches above the base of the bladder. During the next twelve hours the bladder emptied itself completely against this 6 inches of pressure, and the discharge became slightly bloody. During the first forty-eight hours the man passed 309 ounces (9 7/10 quarts) of urine. The patient was encouraged to drink large quantities of water. The catheter was now disconnected from the pressure tube, and the bladder allowed to drain freely into a bottle. The pressure could have been easily continued for twenty-four or forty-eight hours longer, and I believe would have had a beneficial effect on the patient. Fear of clotting from the bleeding present was an important factor in my determining to discontinue the pressure. I feel certain, however, that this could have been overcome with little difficulty. As it was, the patient was badly collapsed.

The systolic blood pressure, which was 170 when the emptying began, fell to 90. The patient's voice dropped to a whisper. He was listless and generally prostrated. Owing to a complicating infection (coming on ten days later) he was four weeks rallying before we felt justified in removing the prostate. From this he rallied slowly, but made a satisfactory recovery.

HYDRAULIC BALANCE

A study of the hydraulics of this condition is most interesting, and some of the findings in this case illustrate nicely the principles involved. To discuss it here in detail would require too much time and would take us away from the subject of this paper. A few of the most important points, however, may be mentioned.

November 20 and December 4, this man's blood pressure was: systolic, 170; diastolic, 100. In spite of insistent urging by his family, he had put off consulting a physician until his chief complaint at his first visit was a weakness and unsteadiness of his lower extremities and a slight edema. Strangely enough, the urine was free from albumin, casts or excess of cellular content. The bladder was distended to the umbilicus. The blood pressure of 170 was working against a full bladder, damming back urine into the kidneys, relieved only by overflow for three years. The bladder began to empty against a hydraulic pressure of 12 inches. In health, the resistance to overflow from the ureter is negligible. In this condition the urinary tract receives the added pressure from periodic contraction of the abdominal and bladder muscles. All this had resulted in a blood pressure of 170. The intravesical pressure had impeded the capillary and venous flow in the mucous membrane of the bladder, ureter, kidney pelvis, and in the urinary tracts of the kidneys. During three years, Nature's craft had in compensation maintained a crippled circulation. In three days this blood pressure fell to 90 mm. without any suggestion of toxemia or infection. Relieved of this back pressure, even though gradual (taking forty-eight hours), this circulation in the urinary tract found itself with a surplus of venous and capillary blood vessels, many of them with weak walls; consequently a congestion and a slight hemorrhage resulted. Under these conditions one of two things must happen: A flood of fluid through the chronically dilated portals must result, or a closure of these portals by the dilated blood vessels mechanically obstructing them. In this case there was a flood of fluid, and collapse of blood pressure and general prostration, with a clammy skin. An additional cause of the fall was the removal of the call for high blood pressure. The organism was freely relieved of its urinary secretions and consequently stopped calling for more force to drive the circulation through the secreting apparatus, and automatically the blood pressure fell. As usual, the pendulum swung too far and the blood pressure fell to a point below comfort.

I am not attempting to name all of the factors in this process or to detail the mechanism of anuria which

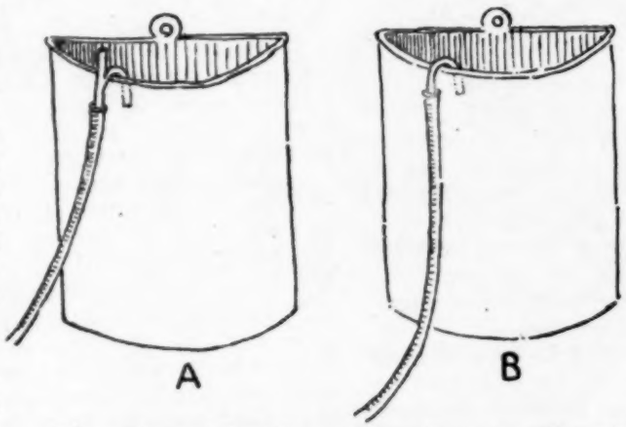
* Read before the Los Angeles Clinical and Pathological Society, May 27, 1920.

will follow a sudden removal of this back pressure by emptying the bladder in one sitting. The importance of a study of the hydraulics in this condition must be evident to every one giving it any thought. I do not know all the factors. I can conceive of an anuria resulting from too low blood pressure to force the circulation through the secreting mechanism. I can also see how congestion could block this mechanism with or without blood pressure.

I hope that this method will be found helpful in giving the circulation time to adjust itself to the change in the hydraulic balances of the body in these neglected prostatic patients. I am convinced that I should have done much better by my patient if I had taken more time and if I had maintained some pressure after the bladder emptied at 6 inches.

SUGGESTIONS FOR IMPROVING OUTLET OF TUBE

A variety of methods of collecting the urine as it comes up into the tube will suggest themselves to any one making a little study of it. Among these would be providing another opening in the can from half an inch to an inch higher than the one into which the urine discharges, This to be kept open into another receptacle so that the urinary pressure can be kept constant. I found it difficult to keep the nurses duly impressed with the need of frequently emptying the douche can so that the pressure should not vary more than 1 or 2 inches as the can filled from the bladder. Some device of this kind which will automatically keep the pressure constant will be a decided improvement.



Different forms of glass tube connecting with can: *A*, with curving attachment to one side; *B*, simple U tube.

Dr. H. H. Sherk of Pasadena suggests that a glass tube have a curving attachment made to one side of it which could be hung over the edge of the can and directly drip into the can. This would provide against the forming of a siphon in the U glass (*A* in the accompanying illustration). I believe the best suggestion, however, on account of its simplicity would be to use a simple U glass, which could be bent by any one over a Bunsen flame, attached to the end of the rubber tube and hooked over the edge of the can (*B*).

Another suggestion comes with the study of the change in blood pressure in connection with the lowering of the bladder pressure: that the blood pressure be watched by frequent readings, perhaps as often as every three or four hours, with the expectation that they would be an index to the increase or diminution of rapidity with which the bladder should be emptied.

The connection between blood pressure and the discharge of urine through the kidneys seems proved by the last few years' study of these two factors, and it seems to me that some direct evidence will be accumulated from studies of this kind.

Dr. B. O. Adams of Riverside has tested this plan recently with satisfactory results. By taking a week to it, he was able to save his patient altogether from collapse. Unfortunately, no records of blood pressure were made. He placed a Y in the tube which, by stopcock control, lowered the fluid in the can conveniently and hence more frequently.

Whatever method is used, the upper outlet of the tube must be securely fixed, adhesive tape being used where helpful, as a giving way might be disastrous. The bladder would empty very quickly if the tube should fall to the floor, probably before either the nurse or the patient was aware of the danger.

ABSCESS OF THE SPLEEN

REPORT OF CASE WITH RECOVERY FOLLOWING OPERATION *

ELLIOTT C. CUTLER, M.D.
Resident Surgeon, Peter Bent Brigham Hospital
BOSTON

A review of the literature would seem to show that abscess of the spleen is not a very rare clinical entity. It is true that textbooks give little space to its discussion, but the excellent summaries of diseases of the spleen by Warren,[1] Johnston[2] and Balfour,[3] and the thorough presentation of abscess of the spleen alone by Hagen,[4] Dege,[5] Elting[6] and Kuttner[7] reveal a fairly large number of reported cases and an excellent appreciation of the underlying pathology.

As a pathologic entity it has long been recognized and, although the clinical picture it presents is not invariable, and its symptomatology is at times obscure, abscess of the spleen should, in a majority of cases, be diagnosed early enough to permit of the undeniable benefits from operative treatment.

Abscess of the spleen is secondary to some infectious process, usually by embolism, less commonly by direct extension, as from a gastric ulcer. The majority of reported cases have occurred in cases of typhoid fever (Kirchmayer,[8] Esau,[9] Pince,[10] Elting[6]); but in cases of malaria (Chowdhoory,[11] Anderson,[12]) general septic infections and with trauma (Omi,[13] Bogdanik,[14] Oganesoff[15]), a fair number of cases are reported. Kuttner[7] collected 116 instances of abscess of the spleen in 1907, and of these, 25.28 per cent. had septic general infections as their etiologic factor. Elting[6] states that almost all the pyogenic bacteria except the gonococcus have been isolated in such cases. Pitt and Fagge[16] and Karewski

* From the Surgical Clinic of the Peter Bent Brigham Hospital.

1. Warren, J. C.: Ann. Surg. **33**: 513-533, 1901.
2. Johnston, G. B.: Ann. Surg. **48**: 50-65, 1908.
3. Balfour, D. C.: Surg., Gynec. & Obst. **26**, 1918; Internat. Abst. Surg., 1-15.
4. Hagen, F. B.: Arch. f. klin. Chir. **5**: 188, 1900.
5. Dege: Ueber Tumoren der Milzgegend. Veroffl. a. d. Geb. d. Mil.-San.-Wis., Berlin **35**: 487-513, 1906.
6. Elting, A. W.: Ann. Surg. **62**: 182-192, 1915.
7. Kuttner, H.: Beitr. z. klin. Chir. **54**: 405-457, 1907.
8. Kirchmayer, L.: Deutsch. Ztschr. f. Chir. **83**: 13-26, 1906.
9. Esau, P. K. H. A.: Ein Fall von Milzabszess nach Typhus abdominalis, nebt Bemerkungen über Milzabszessen überhaupt, Inaug. diss., Greifswald, 1903.
10. Pince, R.: Contribution à l'étude des abcès de la rate dans la fièvre typhoide, Toulouse, 1903, 1-100.
11. Chowdhoory: Brit. M. J. **2**: 1047, 1887.
12. Anderson, A. R. S.: Lancet **2**: 1631, 1906.
13. Omi, K.: Chugai Iji Shinpo **28**: 28-296, 1907.
14. Bogdanik, J.: Berl. klin.-therap. Wchnschr. **8**: 12, 1905.
15. Oganesoff, L. A.: Med. Obozr. **75**: 746-760, 1911.
16. Pitt, G. N., and Fagge, C. H.: Practitioner, London **86**: 541-543, 1911.

reported a streptococcus from their cases, and Paus,[17] Elting[6] and Muscatello[18] reported pneumococcus from their individual cases. Kuttner[7] reproduced splenic abscesses in animals by the injection of various bacteria and oil into the splenic artery and into the splenic pulp and by traumatizing the pulp without breaking the capsule. Abscess of the spleen was secondary to operation for acute appendicitis in Fauntleroy's[19] case; and in the case of Spear,[20] it was secondary to an attack of influenza, the organism not being isolated.

There may be a solitary large abscess which may reach enormous size, as that reported by Litten,[21] containing 15 liters of pus; or there may be multiple small abscesses, as is common in any parenchymatous organ with a terminal pyemia present. The majority of the cases reported as abscess of the spleen naturally are of the solitary type, and these abscesses are characterized by the fact that sequestrums of splenic pulp are found free in the purulent contents of the abscess cavity (Kuttner[22]).

Operative intervention should be undertaken as soon as possible. Federman,[23] Hagen,[4] Elting[6] and Johnson[2] point out the better results from such treatment, and Elting[6] generously criticizes the mortality in his case as due to a failure to recognize the condition earlier. Stuckey[24] reports a mortality of from 21 to 23 per cent. in the operative cases, and Balfour[3] in twenty-seven operative cases found four deaths, a mortality of 15 per cent. Hagen[4] reported nine cases of operation with one death. This is contrary to the figures given in the larger textbooks (Keen,[25] Osler and McCrae[26]) of from 75 to 85 per cent. mortality. The best prognosis appears to be offered in the typhoid abscess cases.

The operation of choice is splenotomy and drainage (Johnson,[2] Balfour,[3] Elting[6]). However, as Hagen[4] reported nine cases, in all but one of which splenectomy was performed, with only one death, there certainly must be some cases in which total removal of the spleen is both possible and advisable. It is evident from a perusal of the literature that the operation of choice may vary with the type and extent of the disease.

REPORT OF CASE

History.—H. C. H. (P. B. B. H. No. 25015, Surg. No. 12507), a schoolboy, aged 12 years, born in Boston, was admitted to the Peter Bent Brigham Hospital, May 25, 1920, complaining of pain in the left side of two weeks' duration. The family history was good; the mother and four sisters were living and well. The past history showed that the patient had always been a strong, healthy child. Tonsillectomy had been performed five years before, and he had had several minor accidents and illnesses. There was no history of gastro-intestinal, genito-urinary or neuromuscular disorders, and no known association with tuberculosis. There was no history of malaria or typhoid fever.

The present illness apparently began four weeks before admission to the hospital. At that time he suddenly complained of acute bilateral earache and was taken to the Massachusetts Charitable Eye and Ear Infirmary, where both ear drums were punctured for acute bilateral otitis media. At the same time his mother came down with acute lobar pneumonia, from which she was slowly convalescing at the time of admission of her boy to this hospital four weeks later. (This seems of interest since it may be supposed that both mother and child derived their infection from the same source, and is of added interest since cultures from the splenic abscess at the time of operation gave no growth.) Following this operation, the patient made an almost complete recovery in a few days. About a week after the operation for drainage of the middle ears, however, he began to have pain in the left hypochondrium, accompanied with diarrhea, loss of appetite and weakness. The pain was not severe, and was of the nature of a slow, steady ache and local soreness. It was inconstant, and at times, for a day or so, it disappeared. Shortly after the onset there was accompanying nausea and vomiting, and the family physician suggested the possibility of appendicitis. Catharsis brought relief, and the boy, feeling better, returned to school. After a day or so he was referred home from school with a note from his teacher that he was too sick to work. This was about two and a half weeks before admission to this hospital. The pain recurred in the left hypochondrium, and there was some nausea and vomiting. In addition there were almost daily, definite, evening attacks of "chills and fever," when the pain in the left upper quadrant became more intensified. Finally, May 25, he was brought by his aunt to the outdoor department of the hospital. Here he was seen by the staff of both the medical and the surgical departments and finally referred into the house with the tentative diagnosis of typhoid fever because of a tender, palpable spleen, the chronic nature of the disease with chills and fever, and a low leukocytosis. He was admitted to the medical wards.

Physical Examination.—The boy was fairly well developed and well nourished, and lay quietly in bed with no apparent pain or distress. He was mentally clear and cooperative. The general physical examination of the head, neck, chest and extremities revealed no abnormalities. The skin was clear, the heart normal in size and position. There was a short, rough murmur accompanying the first sound, heard best at the apex. The lungs were resonant, with good expansion, the breath sounds everywhere being vesicular, with no râles. The left inguinal glands were easily palpable but not tender, and the other superficial glands could not be palpated. The reflexes were normal and equal on the two sides.

The abdomen was symmetrical and the anterior wall well muscled. There was a slight prominence in the epigastrium, but no pulsations were seen or felt. There was definite tenderness in the left upper quadrant, with spasm of the musculature in this region, and dulness extended from the sixth rib to 2 cm. below the costal margin. The liver edge could not be felt, and the gallbladder and kidneys were not palpable. There was no definite costovertebral tenderness, although there was generalized dulness extending into the left flank. No shifting dulness or other evidence of intra-abdominal fluid could be made out. The spleen as a definite organ was not palpated, although the increased dulness and spasm in this region were thought to be due to an enlarged spleen, and on deep respiration there was the suggestion of a descending mass.

On admission the temperature was 99, the pulse 100 and the respirations 20. Blood examination revealed: leukocytosis, 8,000; hemoglobin, 75 per cent. (Tallqvist); red blood cells, 3,980,000, normal in size, shape and color. Smear: polymorphonuclears 77 per cent.; lymphocytes, 16 per cent.; large mononuclears, 4 per cent.; eosinophilis, 3 per cent. The urine was yellow, cloudy, acid, with a specific gravity of 1.022, and contained no albumin or sugar; the sediment showed granular débris and rare white blood cells.

A diagnosis of questionable intra-abdominal abscess, possibly splenic, or teniasis was made. The patient did not appear very ill.

Clinical Course.—During the next twenty-four hours there was almost no change in either the general or the local condition. The temperature was normal the morning after admission, there was a normal bowel movement, and a fair amount of nourishment was taken without complaint. The

17. Paus, N.: Deutsch. Ztschr. f. Chir. **133**: 386-389, 1915.
18. Muscatello, G.: Gazz. med. ital. **55**: 141-144, 1904.
19. Fauntleroy, A. M.: Report of a Case of Splenic Abscess, J. A. M. A. **56**: 260 (Jan. 28) 1911.
20. Spear, W. M.: Abscess of the Spleen, J. A. M. A. **41**: 304 (Aug. 1) 1903.
21. Litten, M., in Nothnagel's Specielle Pathologie und Therapie, Vienna, Alfred Holder, Die Krankheiten der Milz **8**: 59, 1898.
22. Kuttner, H.: Verhandl. d. deutsch. Gesellsch. f. Chir. **36**: 23-25, 1907.
23. Federman: Deutsch. med. Wchnschr. **31**: 586-588, 1905.
24. Stuckey, L.: St. Petersb. med. Wchnschr. **35**: 580-583, 1910.
25. Keen, W. W.: Surgery, Philadelphia, W. B. Saunders Company **3**: 1076-1078, 1908.
26. Osler and McCrae: Modern Medicine, Ed. 2, Philadelphia, Lea & Febiger **4**: 944, 1913.

temperature rose during the day, reaching 100.4 at noon, and 101.3 at 4 p. m.

Suddenly, without previous warning, at 5:40 p. m. the patient was seized with violent pain in the left hypochondrium; he then had a severe chill, became almost immediately actively delirious, and began to vomit. The temperature taken shortly afterward was 106, and within an hour the white blood cells had risen to 23,000. Vomiting of yellowish, fluid, gastric contents continued. The abdomen became absolutely rigid, and the surgical staff was called in consultation. Before their arrival, a cold sponge bath was given, and within an hour the temperature had dropped to 102.

When seen in consultation, the patient was conscious and rational, but fretful and evidently suffering from considerable abdominal pain. The pulse varied around 110 and was of good quality, although the patient appeared somewhat cyanotic. Respiration was almost entirely thoracic. The abdomen seemed a little full, and there was boardlike spasticity throughout the anterior abdominal wall, although the tenderness was a little more marked in the left hypochondrium. There was no distention or palpable mass, and a rectal examination was inconclusive, because of the fretful nature and youth of the patient. There was some evidence of shifting dulness, and the dulness in the left flank seemed to have increased. It was obvious that there was generalized peritoneal irritation but, as the patient had markedly improved in the half hour since the abrupt onset of his attack, and as there were many conflicting opinions among the original observers as to the focus from which such an overwhelming irritation could have proceeded, as based on their earlier observations, operation was withheld for the moment and the patient transferred to the surgical service for further observation.

Two hours later the temperature had dropped to 100 F. and the general condition was much improved. The abdomen was slightly distended and there was definite evidence of shifting dulness. Rectal examination was negative. There was generalized spasm and tenderness, but both were definitely more marked in the left upper quadrant. The lesion was, therefore, presumably localized in the spleen, and with the story of a bilateral otitis media followed for four weeks by evening chills and fever, constant pain in the left hypochrondrium and an enlarged spleen, the diagnosis of abscess of the spleen, rupture and general peritonitis was made and immediate operation determined on.

Operation.—Under gas-oxygen anesthesia a 3-inch, high, left rectus incision was made just medial to the outer border of the muscle. The muscle was retracted medially, when a definite mass was easily palpable beneath the hand in the wound, and the tissues of the posterior rectus sheath were noticed to be infiltrated with serum and much thickened. On opening the peritoneum, free, turbid fluid filled with fibrin flakes was present in large quantities. Swabs were made of this fluid for culture inoculation. In places among the coils of intestine where the fluid had sedimented, it consisted of frank pus and the peritoneum everywhere was injected, diminished in luster and flecked here and there with fine particles of fibrin. The intestines were walled off mesially, and the excess fluid mopped out. This exposure showed that the transverse colon at the splenic flexure, the lower border of the stomach and the omentum were intimately adherent by firm adhesions to a greatly enlarged spleen, and that just inferior to these points of adhesions there was a ragged, irregular, necrotic tear into the substance of the spleen. Examination of this tear revealed a cavity the size of an adult's fist in the substance of the spleen filled with purulent, necrotic, splenic pulp and thick pus, most of which had apparently been discharged into the abdominal cavity. An attempt was immediately made to free the spleen from the surrounding structures, it being hoped that splenectomy might offer a better chance for recovery. The nature of the adhesions to stomach and colon were so intimate and the proximity of the tail of the pancreas so immediate that it was soon seen that, even if possible, such a procedure would be most time consuming, as well as holding the added risk of injury to some other important organ. This attempt, therefore, was almost immediately discontinued, and two large cigaret drains led into the wound, one behind the spleen and the other into the necrotic cavity within the spleen itself. Rapid closure about these drains was accomplished, a continuous suture of No. 1 chromic catgut being employed for the peritoneum and posterior rectus sheath, a continuous suture of No. 2 chromic catgut to the anterior rectus sheath, and three silkworm-gut tension sutures including skin and fascia, between which a few fine silk sutures were placed for better skin approximation. A 2-inch midline suprapubic wound was then made immediately above the pubes, and after the evacuation of a considerable amount of purulent fluid, a large cigaret drain was led into the pelvis through this wound.

Postoperative Course.—The patient was then placed in bed in a semirecumbent position and made a good immediate postoperative recovery. For twenty-four hours hiccuping, doubtless due to irritation of the diaphragm from infection on its abdominal aspect, was a troublesome factor, combined with some vomiting; but the temperature for the first five days never reached above 101, and the pulse steadily declined from 120 to 100. In fact, the general condition visibly improved daily. Distention never became troublesome, being easily controlled by enemas. The drains were gradually removed, the amount of discharge rapidly diminishing after the first four days, the suprapubic drain being removed on the seventh day after operation. By this time the patient was taking nourishment well, and the fluid intake was up to 2,000 c.c. daily. Cultures made of peritoneal fluid at the time of operation showed no growth. The white blood cells dropped to 12,000 by the second and third days after operation.

On the ninth day, one of the drains from the upper wound was removed, evidently the one entering the spleen itself, from the character of the material on the end of the drain. The next day the patient was worse, respiration was difficult, he vomited several times, and he had some local pain. It was presumed that a small pulmonary infarct had occurred, although no signs could be made out with the stethoscope. This reaction was temporary and the patient steadily gained in condition until the nineteenth day after operation, when the temperature, pulse and respiration rate began to climb, reaching 101.9, 130 and 25, respectively, on the twentieth day. A thorough physical examination revealed suggestive signs of fluid in the left pleural cavity, which was immediately confirmed by roentgenograms, the latter showing definite clouding of the whole left side. Thoracentesis in the eighth interspace yielded straw colored fluid. Forty c.c. of fluid was withdrawn, giving considerable subjective relief. The fluid clotted solid within three minutes; a culture was taken, but there was no growth in seventy-two hours. By the twenty-second day all drains had been retired. Following the thoracentesis, the temperature, pulse and respirations returned to practically normal limits until the twenty-seventh day after operation, when the temperature suddenly rose to 103.5 and the pulse to 140. Thoracentesis was repeated, and 60 c.c. of straw colored fluid removed and cultures of it made. The withdrawal of the fluid again resulted in much subjective relief, but the course of the pulse and temperature continued hectic and septic for ten days more, when they gradually fell to normal and remained so until the patient's discharge. Cultures from this second tapping grew both streptococcus and staphylococcus. Roentgen-ray studies of the left chest on the thirtieth day revealed a definite decrease in the amount of fluid, and because of this, the obvious general improvement and the nature of the fluid, thoracostomy was withheld. It is our experience that such secondary pleural irritations often subside spontaneously.

By the forty-fifth day the patient's condition had so improved that he was up and about the ward, and on July 14, the fifty-second day after operation, he was discharged home well, with all wounds closed, weight 33 kg. (72¾ pounds). Since his discharge he has steadily improved in condition, and at the time of our last examination, August 27, he had no complaints, his weight was 39 kg. (86 pounds), the wound was solid, and his general condition excellent.

COMMENT

In retrospect, the diagnosis in this case, except for its relative rarity, should have been made immediately

after the acute rupture took place. The fact that there was an original focus (the otitis media), the continued evening chills and fever, and the localizing symptoms in the left hypochondrium were characteristic and almost pathognomonic. A postoperative study of the literature revealed this, but at the same time it is only fair to say that the diagnosis has not usually been made before operation. Grand-Mourset [27] collected fifty-seven instances of abscess of the spleen, in only fourteen of which was the correct diagnosis made, and the cases of Elting [6] and Wilson [28] are examples of how, even under protracted observations, the diagnosis may be missed. However, it is obvious after a survey of the reported cases that the chief obstacle in making the diagnosis is simply lack of familiarity with the condition. The physical signs in most of the cases reported, as in our own, if correctly interpreted, were sufficient, and it was only the fear of overlooking some more common lesion that blocked an earlier diagnosis. This report, therefore, exemplifies the value of careful physical diagnosis.

The subject of the technic of surgical intervention has been admirably presented by Tedenat,[29] Elting,[6] Hagen [4] and others; and although there is some divergence of opinion as to splenectomy, it is one based on the different types of abscesses. In the single larger type such as this, it is our impression from reading other reports that drainage, rather than splenectomy, is indicated; and if the operation can be performed before rupture or before a pyemic condition is instituted, there is every reason to believe that the mortality can be brought down to about 10 per cent. We feel that since the chief obstacle to operative intervention, which alone can be of help, is the lack of appreciation of the frequency of occurrence of such lesions, a report of a typical case might be of some assistance to others.

27. Grand-Mourset: Thèse de Paris, 1885, No. 368.
28. Wilson, T.: U. S. Nav. M. Bull. **10**: 674-676, 1916.
29. Tedenat: Rev. de gynéc. et chir. abd., July-August, 1901.

MILK-BORNE DIPHTHERIA

AN OUTBREAK TRACED TO INFECTION OF A MILK HANDLER'S FINGER WITH B. DIPHTHERIAE

JONATHAN E. HENRY, M.D., C.P.H.
Epidemiologist, Massachusetts Department of Public Health
BOSTON

Aug. 20, 1920, four cases of diphtheria were reported from Williamstown, Mass. (population, 4,200), the seat of Williams College. On the next day nine more cases were discovered.

Investigation was made by the department epidemiologist, August 22 and 23, and during its progress nine additional cases were reported. Since then to date (August 31) there have been eleven new cases, none with onsets later than August 24. Doubtless some secondary cases will follow.

The last known case of diphtheria in Williamstown had occurred in July at a college boarding house of the better class. In summer this house is patronized by vacationists, faculty members and special students, about one half of whom only take meals there. This patient, a young woman vacationist, became ill with sore throat, July 16, but did not see a physician at once. Diagnosis was made and quarantine instituted, July 21. August 10, she left the state.

Of the first thirteen cases of the outbreak, five were from this house. It was, therefore, the first place visited, and, on this visit, it was discovered that four more persons from there, two guests and two servants, were at their homes ill with sore throats. One servant was a maid and the other a waiter. These cases were diagnosed diphtheria on clinical evidence, and the diagnoses were subsequently confirmed by the state laboratory, so that there were now nine out of the seventeen patients from this place. Of the remaining eight, two children were known to have been in contact with one of these patients. Of the remaining six, no contact with the boarding house group seemed likely or was later discovered. Five of the six patients (who lived in separate homes in different parts of the town) had the same milk supply as that which was used at the boarding house. The remaining patient reported another supply.

At this stage two clues were entertained: 1. That the July patient had left one or more carriers—probably among the kitchen help (in fact, a case had already been found among the waiters; but it was acute). 2. That the milk was to blame. Against the first assumption was the fact that, though the first patient had been at the boarding house at least from July 16 to August 10, the outbreak did not occur until August 20, with no date of onset found earlier than August 12. Furthermore, the outbreak was explosive, which is not common with diphtheria caused by contact, especially among adults. However, a carrier among the food handlers was under consideration. Such a carrier could have caused a sudden outbreak in the house, but more likely would have done so earlier.

There were left, then, six outside foci not connected with the boarding house, five of them having the milk supply used at this house. During the day four more cases came in representing four new foci unrelated to that group. Three of these patients had the suspected milk. A fourth produced his own milk, but on second questioning stated that he had bought a quart of cream from the dairy in question, August 15, and had partaken of it. The two children mentioned as having associated with a known patient also had this milk. A careful checking of the whole list of patients to this time, twenty-one in all, showed that twenty of them had the same milk, that nine of them were from the same boarding house among whom was a waiter (food handler), that only two of the twelve not at that house had any known association with that group, and that there were twelve foci, eleven of which had the suspected milk. Later it was also found that the twelfth patient had purchased extra milk from a grocery that handled the product of this dairy.

Cultures were taken twice from the noses and throats of the remainder of the boarding house group, thirty-two in all, August 22 and 23.

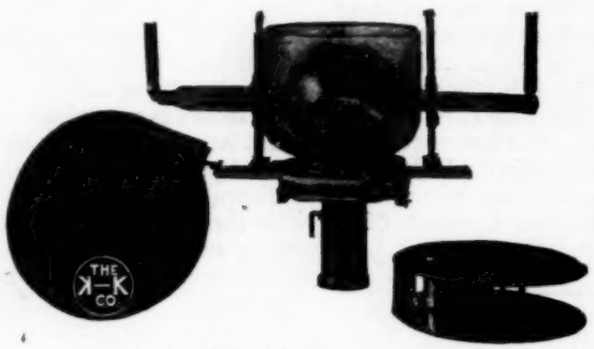
The dairy was visited the morning of the 23d. The town assessor's books show a total of 970 cows in the town, virtually all supplying milk for local use. Six dairies with 177 cows supply the town commercially. Besides there are a number of two to five cow dairies. The dairy in question is the largest, having fifty-four cows. It furnishes about one fourth of the commercial supply and about one eighteenth of the total supply. It had bought no milk for two months nor sold any to dealers. It had had all of the first twenty-one cases on its route. It is considered the best in the place and was in fair sanitary condition, as country dairies go. It was learned that the

supply is unpasteurized, that the bottles are washed in warm water but not sterilized by steam or boiling for fear of breaking them, and that the wet method of milking is used. The milk was not mixed, but each milker used a separate receiving receptacle from which the milk was usually bottled separately. This merely happened so without any design.

Cultures were taken from the family of the dairyman and from the other milk handlers, fifteen in all. A daughter of the owner had a sore right index finger. On examination it was found that the nail was gone and that the sore was covered by a soft, brownish scab, removal of which revealed a soft, white exudate. Cultures were taken from this. The sore was apparently healing and had probably been worse. It was first sore, July 30, and the nail had been removed, August 8, by a local physician. She said that she had milked except when her finger was too sore to do so, and had been at work in the dairy all the time either milking, delivering milk or helping in other ways.

Recommendations were then made that the dairy should be considered the probable source of the outbreak, pending further findings.

Reports from the cultures at the boarding house showed *B. diphtheriae* from the throat of one of the maids. Returns from the dairy cultures showed *B. diphtheriae* from the sore finger. Inoculation from this culture proved fatal to a guinea-pig in seventy-two hours. A control pig protected by antitoxin did not die. Diagnosis of nearly every case was confirmed by the department laboratory. The source of infection of the milkmaid's finger has not yet been determined.



Safety device for roentgen-ray tubes.

The dates of onsets of thirty-two cases traced directly to the milk were: August 12, 2; 14, 2; 16, 3; 17, 1; 18, 9; 19, 5; 20, 2; 21, 1; 22, 1; 23, 3; 24, 3.

The incident is interesting in that, while neither a milk outbreak of diphtheria nor a true diphtheria wound infection is very common, a combination of both is indeed unique. Another fact of interest is that this wound infection did not cause any carriers or true cases among fifteen persons at the milk farm, nine of whom were children from 1 to 20 years old, though contact had been very intimate and the period of exposure at least from the onset of the outbreak.

SECOND OUTBREAK

No further cases occurred until September 15, at which time there was a second outbreak of fourteen cases, with onsets September 15, 18 and 19. The infected milker had returned home and gone to work, September 11. It was discovered that one of the cows had a teat infected with *B. diphtheriae* and also that the owner (a milker also) had the infection in a sore on his hand. He stated that he mashed his hand with a hammer, September 13.

It is impossible to say whether the infection passed from the girl's finger to the cow and from the cow to the man's hand, or whether the father's hand was infected in the home.

The girl returned to work without negative cultures for release, but at the time of the second outbreak the culture from her finger was negative and has been found negative once since. All diagnoses were made in the state department laboratory.

Clinical Notes, Suggestions, and New Instruments

A SAFETY DEVICE FOR ROENTGEN-RAY TUBES

E. S. BLAINE, M.D., CHICAGO

The ever present danger to patient and operator of physical contact with the high tension field during roentgen-ray exposure for plate or therapy calls for particular care in all roentgen-ray procedures. Many, if not all, roentgenologists of large experience have had patients who inadvertently came into too close proximity with the terminals of the roentgen-ray tube. This resulted in a more or less disagreeable shock with old style apparatus, depending on its particular setting; but the apparatus with rheostat control was not particularly dangerous to life. With the modern autotransformer control, a different situation arises in which the same accident is far more serious and has in several instances caused death to the patient, and in one well known instance to the operator himself.

The best way in which to avoid this occurrence is to keep removed a sufficient distance from the terminals to provide safe insulation against entering the high tension field. In spite of all warnings, some patients, particularly during treatment exposure, will raise a hand to scratch the nose or make some similar movement, and thereby the hand comes in contact with the tube terminal with the result noted above.

A safety device is now available which will protect against this accident. A cage or cover of an insulating material is placed over both tube terminals. These cages are attached to the tube stand supporting the tube. The design of this device is such that neither the patient nor the operator can touch the danger points at any of the ordinary working conditions of the roentgen-ray tube operation. The high tension wires as well as the low tension Coolidge leads leading from the tube terminals are enclosed in insulated tubes, thus adding further protection against accidental contact with these dangerous parts. The tube can be set in most desired positions with little or no interference from the safety device, and is quickly attached to the standard tube stands.

5 South Wabash Avenue.

A CASE OF BACILLARY DYSENTERY WITH PSEUDO-MEMBRANE IN THE VAGINA AND EDEMA OF THE ABDOMINAL WALL

ISAAC IVAN LEMANN, M.D., NEW ORLEANS

The points of interest in this case are indicated in the title. These points have seemed of sufficient importance to warrant this report, because none of the standard texts mention them and apparently they have not previously been described in the literature.

History.—A. O., a white married woman, aged 48, whom I saw Nov. 15, 1919, at Touro Infirmary in consultation with Dr. W. P. Bradburn, through whose courtesy I am permitted to make this report, had eaten a cream puff, November 3, which did not seem fresh. The next day she had severe pains in the epigastrium, and loose bowels with straining.

November 5, nausea began. All symptoms increased until November 10, at which time she was first seen by Dr. Bradburn. At that time Dr. Bradburn described her as being in a state of collapse; the surface covered with a cold perspiration, the pulse weak and rapid. There was slight rigidity of the upper abdomen, and apparently a mass about the size of an orange in the epigastrium. This apparent "mass" disappeared within a few days. After her admission to Touro Infirmary, November 10, she was given glucose and sodium bicarbonate, each 5 per cent. solution by proctoclysis, one-fourth grain of calomel every two hours, and later a teaspoonful of paregoric every three hours. No food was given, only water being allowed.

Examination.—When first seen by me, November 15, she had improved; but her face was still somewhat pinched, the temporal fossae were sunken, and the general appearance was that of great prostration. The bowel movements had continued to be numerous, bloody and mucous, and extremely offensive. The patient had vomited once, though she suffered greatly from nausea. There was marked edema of the abdomen, slightly greater in the upper right quadrant. The patient flinched slightly when pressure was made in the liver region, but the abdomen in general was not tender. The liver edge was felt three finger breadths below the costal margin on deep inspiration. The heart and lungs were negative. At the introitus of the vagina a roughened, corrugated elevation was felt. The vaginal walls, vault and cervix felt edematous. On inspection with the speculum, the rough, corrugated elevation proved to be due to a thick, tenacious, dirty-gray membrane which was pulled off with difficulty and left a superficial bleeding ulceration. On the cervix there was also an erosion and membrane. Rectal examination (digital) revealed nothing abnormal. The patient's blood gave a strong agglutination with the Shiga bacillus. Dr. John A. Lanford, pathologist of Touro Infirmary, was also able to recover Shiga bacilli from cultures made from the vaginal pseudomembrane and from the cervix. Other laboratory examinations were without special interest. The blood showed a moderate leukocytosis (17,000, with 85 per cent. neutrophils). The urine had a trace of albumin and a large amount of indican. The feces revealed no parasites and no ova, but pus, blood and epithelial cells were present. The stools were copious, liquid and offensive.

Treatment and Results.—In addition to the supportive measures, the principal features of the treatment were: (1) liquid diet without milk; (2) daily duodenal irrigations with sodium sulphate solution by means of the Jutte tube; (3) irrigations of the vagina three times daily with 1:1,000 permanganate solution. Improvement began almost at once. Virtually all symptoms had disappeared in three weeks, and by the end of the month (December 15), the patient had entered fully into convalescence. In February, 1920, Dr. Bradburn reported her in perfect health in every way.

It will be noted that the croupous pseudomembrane in the vagina in this case corresponds exactly with those universally described as occurring in the bowel of dysentery patients; in other words, the bacilli seem to act on the vaginal as they do on the intestinal mucous membrane. The question arises as to the manner in which they were introduced into the vagina. The most plausible explanation would seem to be that the contamination was directly from the rectal discharges by proximity, especially as the inflammatory process was most extensive and intense at the introitus, and seemed to be ascending; or the infection may have been by contiguity within the pelvis. In this connection it seems pertinent to cite the opinion of Flexner and Sweet[1] as to the mode of production of the pseudomembrane in the bowel. They assert that the bacilli may abound in the small intestine where no pathologic lesion may be found, but they give rise to toxins, one of which acts on the lower bowel, the other on the nervous system. The excretion of the toxin causes an exudation of lymph into the submucosa and later into the mucosa. This lymph coagulates and is invaded by a cellular exudate, and in due course the glands and the tissue of the mucosa and muscularis mucosae are destroyed by coagulation necrosis, with thrombosis of vessels. If the ulcers of the lower bowel and the false membrane there are produced by the excretion of this toxin, it might be asked whether the vaginal condition could not be produced in the same way. Another theory may be suggested, namely, that the infection was carried to the vagina by the blood stream. Cases of bacillary dysentery septicemia have been reported.[2] However, there was nothing else in our patient's condition to warrant such a supposition. Unfortunately, no blood culture was made.

I have no explanation to offer as to the production of the edema of the abdominal wall. Its appearance was analogous to the edema frequently noted on the thoracic wall over empyemas and over abscesses of the liver.

1. Flexner and Sweet, quoted by Castellani and Chalmers: Manual of Tropical Medicine, 1910, p. 992.

2. Markwald and Rosenthal, quoted by Castellani: Manual of Tropical Medicine, 1910, p. 992. De Sautelle, W. T.: A Case of Bacillus Dysenteriae Septicemia, J. A. M. A. **63**: 1853 (Nov. 21) 1914.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 286). Lederle Antitoxin Laboratories, New York.

Pneumococcus Glycerol-Vaccine (Types I, II, III—Polyvalent)—Lederle.—A suspension of killed pneumococci of characteristic strains of Types I, II and III (equal portions of each type) in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent., and cresol 1 per cent. The product is supplied in packages of 3 vials containing the glycerol-vaccine and of 3 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of Pneumococcus Glycerol-Vaccine (the concentration of killed bacteria for the first dose being one half as great as for the second or third dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution the first dose contains 6,000 million killed bacteria; the second and third doses contain 12,000 million killed bacteria each.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1920, p. 285). Lederle Antitoxin Laboratories, New York.

Pertussis Glycerol-Vaccine — Lederle — A suspension of killed Pertussis bacteria (Bordet) of eight strains in a vehicle composed of glycerol 66 per cent., physiologic solution of sodium chloride 33 per cent. and cresol 1 per cent. The product is supplied in packages of 5 vials containing the glycerol-vaccine and of 5 vials of sterile diluent with which to make the proper dilution of the vaccine at the time of injection. Each dose consists of 0.1 Cc. of Pertussis Glycerol-Vaccine (the concentration of the killed bacteria increases progressively for each respective dose) and 0.9 Cc. of sterile physiologic solution of sodium chloride. After dilution, the five different doses contain 1,000 million, 2,000 million, 4,000 million, 6,000 million and 8,000 million killed bacteria respectively.

BACILLUS BULGARICUS (See New and Nonofficial Remedies, 1920, p. 156).

Culture of Bacillus Bulgaricus-Coleman.—A pure culture of *Bacillus bulgaricus* marketed in bottles containing about 90 Cc.

Actions and Uses.—This culture is stated to be suitable for all purposes of which *Bacillus bulgaricus* is used. See general article, Lactic Acid-Producing Organisms and Preparations.

Dosage.—From 4 to 12 Cc. in sweetened water or milk half an hour after meals. The culture must be kept in a cold place and should not be used after the time stamped on the bottle.

Manufactured by The Coleman Laboratories, Wheeling, West Virginia. No U. S. patent or trademark.

The culture is grown on a medium composed of whey broth containing dextrose.

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SATURDAY, DECEMBER 18, 1920

With the expiration of the calendar year, subscriptions to THE JOURNAL and Fellowship dues become payable. A pink slip to be used in remitting dues and subscriptions for 1921 is inserted in THE JOURNAL this week. This is in accordance with the procedure followed the last two years, which proved to be satisfactory to all concerned, and a great saving in labor and in postage in the central office, for to send a bill under first-class postage to each subscriber and Fellow entails a large expense. The slip which is inserted in each copy of THE JOURNAL, though less formal than a personal statement, serves the same end. It is hoped that even a larger number of Fellows and other subscribers than heretofore will cooperate in this matter.

PREPARATION OF DIABETIC PATIENTS FOR SURGICAL OPERATIONS

In order to avoid a variety of possible postoperative complications in persons with diabetes who may require surgical intervention, it is important to give them the benefit of special preliminary dietary consideration and therapy. It has been emphasized that if surgery is indicated, diabetes is no excuse for its nonperformance. On the other hand, it is the duty of the surgeon to understand thoroughly the dangers that may threaten, and to prepare to combat them. Foremost among possibilities of interfering symptoms is acid intoxication or ketosis; for in diabetes the acidosis is associated preeminently with the production of beta-oxybutyric acid, aceto-acetic acid and acetone.

Only a few years ago it was customary to combat this menace by the liberal use of alkalis, notably sodium bicarbonate. The existence of the ketosis and the degree of depletion of the alkali reserve of the blood plasma can now be ascertained with scientific precision by clinically available methods. The treatment with alkalis has, however, proved to be otherwise than advantageous. A diabetic patient theoretically needs alkalis, Joslin [1] writes. But one must bear in mind the possibility, he adds, that the administration of small quantities of an alkali over long periods may set free acid bodies existing combined, quiescent and harmless in the body, and thus do harm. Furthermore, the administration of alkalis over long periods may deplete the body salts, such as chlorids, which are distinctly useful. Another danger from the use of alkalis, Joslin continues, is the occurrence of nausea and vomiting, and this is real, though greatly lessened when chalk is combined with the sodium bicarbonate. When alkalis are given, large quantities of urine must be voided to remove the salts of the acid. The quantity of liquid which must be ingested is so large as to overburden the stomach, and the excretion of so much acid frequently overwhelms the kidneys and they cease to act.

The same warning has recently been uttered by Kahn [2] of the Beth Israel Hospital, New York. He, too, points to the necessity of averting rather than combating the ketosis by preventing the formation of the ketone substances. As they are now generally admitted to arise from the incomplete catabolism of fats, owing to the inadequate combustion of the carbohydrates by the diabetic, the foremost aim should be to decrease the fat intake to a minimum and, theoretically at least, to attempt to increase the antiketogenic power of the organism. A few years ago the protein-fat diet, free from carbohydrates, was a favorite method of treatment. Such a procedure may at times precipitate a coma; but if the fat is excluded in large measure and a small amount of carbohydrate even permitted, the outcome of highly restricted corrective diets may be far more satisfactory. The latest lesson in this domain of clinical medicine teaches that in severe diabetes it is not merely the metabolism of the carbohydrates, but also that of the fats and even of the proteins that is disturbed. The selection of foods within the tolerance of the patient represents the keynote of successful therapy. The time has come for the surgeon to follow the lead of the internist in seeking the upbuilding of tolerance rather than employing the once popular alkali therapy prior to operative treatment of diabetics.

1. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea & Febiger, 1917, p. 394.

THE ROUTE AND RESULTS OF OUR FIRST INFECTION WITH TUBERCULOSIS

We have moved forward step by step in our knowledge of the routes of infection and processes of protection in human tuberculosis, until now we may fairly be said to have a satisfactory understanding of these matters. Gradually the old saying that "every one has a little tuberculosis" was turned into something more definite by the studies of pathologic anatomists, who made a careful search for the scars of healed and quiescent tuberculosis, and raised the early estimates of from 50 to 70 per cent. of tuberculous infection in the adult population to 90 per cent. or more, by means of gross inspection and microscopic corroboration. A distinct advance was made in the study of this important

2. Kahn, M.: Preoperative Preparation of Diabetic Patients and Their Subsequent Treatment, Surg., Gynec. & Obst. 31: 363 (Oct.) 1920.

problem when Opie of St. Louis began to supplement the postmortem studies by making roentgenograms of the respiratory tract after its removal from the body. By this means it has been found possible to locate the scars of healed tuberculous lesions with a readiness and accuracy not approached by the usual procedures of palpation and sectioning. We have already commented on Opie's [1] earlier observations, which showed more clearly and conclusively than had been done before that nearly all persons in this country acquire in childhood tuberculous pulmonary infections, which occur as foci scattered throughout the lung with no particular predilection for the apexes, and which are almost constantly accompanied by tuberculous lesions in the adjacent lymphatic nodes, often more extensive than the primary pulmonary lesion.

When the lungs of adults are examined, these healed lesions, being usually densely cicatrized and in great part calcified, are readily detected in roentgenograms. In association with the apical lesions, which occur in the later period of childhood and in adult life, there is no caseation or calcification of the regional lymph nodes. In harmony with experimental observations, the early focal lesion has the character of a first infection and implicates the lymphatic nodes, whereas the apical lesion has the character of a second infection and exhibits no tendency to cause caseous tuberculosis of adjacent lymph nodes. It was shown that apical lesions increase in frequency with increasing age. They rarely occur before 10 years of age; from 10 to 18, the incidence was 11 per cent.; between 18 and 50 years of age the incidence of apical lesions in those who had died with conditions other than tuberculosis was approximately 14 per cent., and after the age of 50 the incidence of apical lesions was much increased, for they were present in more than a third of those who had died from all causes. In the young person infected for the first time with tuberculosis, the lesion assumes the features seen in susceptible animals inoculated with tubercle bacilli, for the infection spreads to the regional lymph glands and is overcome by the development of a specific increase in resistance. In the adult, presumably because of the persistence of this acquired partial immunity, the apical lesion usually pursues a chronic course and does not spread to the lymph glands; this is a characteristic of second infections in animals already tuberculous which was observed first by Koch.

In a more recent paper, Opie [2] states that in a series of eighty-six lungs of adults examined, only seven showed no calcified lesions on the roentgenograms, and uncalcified cicatrices probably could have been found in these. In the remaining seventy-nine cases the lesions were usually multiple, and in ten cases the involvement of the lung and the lymph glands was very extensive. In these the individual must certainly have passed through a serious infection, which, even if its symptoms were so inconspicuous that they left little if any impression on his memory, nevertheless subjected him to grave danger at some period of his childhood, for in such cases Opie found healed tubercles usually present also in the spleen and liver. In one case, indeed, healed calcified nodules, presumably of healed tuberculosis, were also found in the meninges.

In approximately half the adult lungs the healed pulmonary nodules, which are usually multiple, are from 0.5 to 1 cm. in diameter, and the more numerous nodules in the lymph nodes are from 1 to 2 cm. across. In many cases the lesions are considerably larger. Only by examining the roentgenograms reproduced by Opie can one appreciate what myriads of healed calcified lesions may be found in a human lung, or what great calcified masses may be present in the peribronchial glands. If we consider that these represent merely the unabsorbed residues of tuberculous lesions which must have been very much larger when in the active stage, and that by no means all the lesions leave demonstrable scars, it is apparent that all of us recover not only from tuberculosis but commonly from really widespread and large tuberculous lesions.

No line can be drawn between the lesions that have been described and those that produce obvious symptoms and death. The distinction between latent and clinical tuberculosis, which is not infrequently made, has no other basis than the limitations of diagnostic methods and the tendency of tuberculosis to proceed to recovery. This idea has been put to the test in the same institution by Cooke and Hempelmann,[3] who found that in a large group of supposedly well children examined by means of the complement fixation test a considerable number giving positive reactions can be shown on careful examination to have other distinct evidences of tuberculosis, which otherwise might have been overlooked. They believe that masked juvenile tuberculosis presents a sufficiently distinctive clinical type to deserve a prominent place in the category of tuberculous affections of childhood.

Ever since attention was drawn to the possibility of primary intestinal infection with tuberculosis, and especially since study of the frequency of infection with the bovine type of tubercle bacilli has been carried out, one conspicuous feature of all statistical compilations has been the relative frequency of primary intestinal infection observed in the British Isles. Evidently, unsterilized milk infected with virulent bovine tubercle bacilli is there consumed to a serious degree. Opie [4] has corroborated these earlier anatomic observations by studying the mesenteric lymph glands with the aid of the roentgen rays. Healed tuberculosis of these glands is seldom seen in this country. In a series of ninety-

1. The Frequency of Tuberculous Infection of the Lungs, editorial, J. A. M. A. **68**: 1913 (June 23) 1917.
2. Opie, E. L., and Anderson, Hans: First Infection with Tuberculosis by Way of the Lungs, Am. Rev. Tuberc. **4**: 629 (Nov.) 1920.
3. Cooke, J. V., and Hempelmann, T. C.: Masked Juvenile Tuberculosis, Am. Rev. Tuberc. **4**: 660 (Nov.) 1920.
4. Opie, E. L.: First Infection with Tuberculosis by Way of the Intestinal Tract, Am. Rev. Tuberc. **4**: 641 (Nov.) 1920.

three necropsies on children and fifty on adults made by him in St. Louis, he found not a single instance, whereas in the bodies of sixty-six young British soldiers examined in France, no less than eighteen showed calcified mesenteric nodules. Although these intestinal infections are presumably for the most part produced by the bovine tubercle bacillus, yet they would seem to be quite as efficacious in protecting the individual against subsequent infection with human bacilli, for instances in which little if any healed pulmonary infection could be found appeared to be much more common among the British than in St. Louis. It is noteworthy that among those in whom mesenteric lesions occur, focal tuberculosis of the lung is scant or absent. First infection with tuberculosis, therefore, may occur by way either of the lungs or, much less frequently, by way of the gastro-intestinal tract, and the occurrence of lesions in one of these sites tends to prevent infection of the other. These studies add still further evidence to the ubiquity of childhood infection with tuberculosis, and its importance in conferring an increased resistance which in most persons entirely prevents subsequent infection, or, at the very least, greatly increases the capacity to localize and usually to overcome all later infections.

BLOOD CONCENTRATION IN INFLUENZA AND ITS TREATMENT

The studies that have been reported by Winternitz [1] and his collaborators on the pulmonary complications of poisoning with a number of lethal gases employed in the World War indicate a striking resemblance between some of the lesions found and the conditions frequently arising in influenzal pneumonia. Pulmonary edema is a serious factor to be contended with in consequence of the damage to the upper respiratory tract. Toxic products that find their way into the circulation may also be a menace to life in all these cases, as they doubtless are in certain other types of infectious disease. Although it has generally been assumed that the cause of death in gas poisoning is the edema of the lungs aided by the accompanying congestion, Underhill [2] has questioned the validity of such an explanation. In a lecture last year before the Harvey Society he pointed out, as the results of extensive experiments conducted for the Chemical Warfare Service, that the pulmonary edema observed in war gas poisoning is accompanied by a distinct concentration of the blood. This phenomenon, indeed, constitutes one of the most striking manifestations of the pathologic conditions encountered. In cases in which the loss of fluid from the blood leads to rapid concentration, the heart, even though its rate is maintained far above normal, may nevertheless no longer be able to maintain a circulation of normal efficiency. Body temperature drops, and further serious consequences ensue. As Underhill [2] has summarized the situation from observations on gassed animals, it seems quite logical to assume that blood concentration is immediately responsible for death. Blood concentration means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, fall of temperature and, finally, suspension of vital activities. The whole aim of treatment in gas poisoning has been to prevent blood concentration or else restore it to a level more nearly normal. When this is accomplished, the animal survives in spite of the fact that the lungs may be very edematous. It may be stated, then, that in the presence of edema and a concentrated blood, entrance of oxygen into the circulation does not prevent death. On the other hand, restoration of blood to a more normal concentration enables an animal to survive even though an extensive edema exists. Administration of oxygen under the last named conditions undoubtedly makes recovery easier. On the basis of such considerations, Underhill proposed a method of treatment involving venesection, infusion and oxygen administration for the reestablishment of normal conditions in the respiratory functions of the blood in gassed individuals.

With the demonstration of the close analogy between the morphologic pathology of war gas poisoning and influenzal pneumonia, one naturally inquires whether the latter disease exhibits comparable signs of blood concentration, and, if so, whether they have a prognostic significance or furnish a guide to therapy. An answer has been given by Underhill and Ringer [3] as the result of a study of the blood of influenza patients exhibiting pulmonary edema. In these investigations, too, it was found that the blood may become greatly concentrated, thereby constituting a factor of great importance with respect to the outcome of the disease. Clinical estimations of the hemoglobin content of the blood serve as a sufficient guide to establish the signs of danger. In a series of forty-three cases, death has invariably followed marked increase in the concentration of the blood. As pointed out in their recent report,[3] the signs of an approaching fatal change must be recognized in due season so that relief measures can be instituted. It is advised that treatment always be given before the blood concentration has reached 125 per cent., for beyond this level it seems to be of less value. The advised procedures consist of venesection and the introduction of fluid into the body by way of either the mouth or the veins, so that a normal blood concentration will be restored. The proposed therapy has given promising results in a few carefully controlled cases. It has a rational basis and deserves careful consideration when the emergency of an influenzal epidemic again arises.

1. Winternitz, Wason and McNamara: The Pathology of Influenza, New Haven, Conn., Yale University Press, 1920.
2. Underhill, F. P.: The Physiology and Experimental Treatment of Poisoning with Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919.
3. Underhill, F. P., and Ringer, Michael: Blood Concentration Changes in Influenza, with Suggestions for Treatment, J. A. M. A. **75**: 1531 (Dec. 4) 1920.

Current Comment

THE CULTURE OF THE PHYSICIAN

Just now the popular educational slogan is vocational education. "Train a child or a youth for the job he is to pursue in life" is the cry of the enthusiast, "to cook, sew, mold iron, lay brick or plan buildings." In colleges the same trend is apparent in the demand for productive scholarship. Admitting that the theory as applied to medicine will make better technicians, it should not be forgotten that it will also make for the influences of materialism. The things of the spirit, the beauty and ennobling effect of culture and refinement in the higher sense, will be lost. In our eagerness to know structure and function, normal and disturbed, of the body, we are likely to forget the whole man: an aspiring, feeling, beauty-loving creature with qualities that distinguish him as superior to the lower animals. Among physicians there have always been found men who eschew the finer things outside the pale of practical medicine, priding themselves on sticking "strictly to business." They frown on any departure from the narrow professional path. They do not see the flowers by the wayside. For them, lectures on literature, art or philosophy have no interest. They gain little pleasure in seeing a great actor interpret Shakespeare, or in hearing good music. Rather, they boast of ignorance with regard to such matters, and let it be known that they have no time for these unpractical subjects. They do not realize that they lay themselves open to the suspicion of an underlying selfishness, a striving after the tradesman's goal of business and professional aggrandizement. The well-rounded man is the one who appreciates the value of the cultural as well as the practical, and who lives a complete and satisfactory life —satisfactory not only to himself but also to his community.

THE FRENCH ACADEMY OF MEDICINE, 1820-1920

By a royal decree of Dec. 20, 1820, promulgated Jan. 14, 1821, Louis XVIII created the Académie royale de médecine, which remains today as the Academy of Medicine in Paris. Founded originally in response to a demand for authoritative advice on matters of national importance pertaining to the domain of medicine and the public health, the distinguished academy which now celebrates its centenary still remains as an official advisory council of the French government in relation to such matters as epidemics, medicolegal problems, the examination of new or secret remedies, the critique of mineral waters, and a variety of aspects of sanitary science and hygiene.[1] In addition to its public advisory relations, the academy has always been devoted to the study and investigation of all disciplines that contribute to the different branches of the healing art. In 1902, it became housed in a new building on the rue Bonaparte in Paris. The long established *Bulletin* of the academy still appears weekly, and includes both official communications addressed to the academy and scientific contributions presented at the weekly sessions. In addition to a hundred regular members, grouped in eleven sections, there are twenty national and twenty foreign associates as well as 100 national and fifty foreign corresponding members, grouped in four divisions. The recital of the names included at present and in the past in these various categories would furnish a catalogue of the most distinguished representatives of the medical profession in all parts of the world. On the one hundredth anniversary of the foundation of the French Académie de médecine, the greetings and felicitations of admirers of its work are certain to be elicited in all parts of the civilized world.

1. An account of the organization of the French Academy of Medicine is given in the Presse médicale, Nov. 26, 1902, No. 95, p. 1131. Dowling, F.: The Academy of Medicine in Paris, New York M. J., July 1, 1911, p. 25. Mémoires de l'Académie royale de médecine **1**: 1, 1828. Bull. de l'Acad. de méd., 1874, p. 1041.

DISAPPEARANCE OF B. DIPHTHERIAE FROM THE THROAT, EXPRESSED MATHEMATICALLY

There is probably no more difficult or more unsatisfactory problem in contagious diseases than that of the diphtheria carrier. Though the death rate for diphtheria has been greatly reduced since the discovery of antitoxin, the morbidity rate has remained virtually the same. Gelien, Moss and Guthrie[1] found that approximately 18 per cent. of 800 healthy children in Baltimore were carriers of diphtheria bacilli at one time or another, and about 11 per cent. of these were carriers of virulent organisms. They also found a higher percentage of positive cultures in children with pathologic throats than in those with normal throats. Of fifty children who yielded positive cultures at the first examination, twenty-nine had positive cultures two weeks later. After four, six, eight, ten and twelve weeks, the number of positive cultures was fifteen, eleven, twelve, twelve and six, respectively. Recently, Hartley and Martin[2] have reduced to a mathematical formula the rate with which diphtheria bacilli disappear from the throat of convalescents. Their data are taken from 3,070 observations in 457 cases. By the use of a logarithmic equation they have found that approximately 5 per cent. of those remaining each day after the fifth day become free from the bacilli in twenty-four hours. This, however, does not apply to those with abnormal throats. The standards used to determine when patients are free are different in many places, and Hartley and Martin have shown mathematically how the results depend on the standard used. In their work, three successive negative cultures taken at weekly intervals were required. If, however, only two successive negatives had been required, then the number free each day would have been 5.4 per cent., and if only one negative had been required, the rate would have been 7.1 per cent. Expressed in another way, the number discharged would have been increased by 9.3 and 29 per cent., respectively, if two negative or only one had been required. The data of other investigators when similarly analyzed also give a logarithmic function, which differs from their own by

1. Gelien, J.; Guthrie, C. G., and Moss, W. L.: Diphtheria Bacillus Carriers, Bull. Johns Hopkins Hosp. **31**: 388 (Nov.) 1920.
2. Hartley and Martin: Proc. Roy. Soc. Med., Sec. Epidemiology and State Med. **13**: 277 (July) 1920.

a constant. This constant difference they attribute in the main to such factors as the strain of infecting organism, the environment of the patient in the convalescent ward, and the treatment of the convalescent. No doubt many external conditions, not an intimate part of the reaction between host and infecting organism, play a part in the rate with which carriers become free. The diphtheria carrier should be intensively studied as an example of the way in which the body rids itself of infecting organisms. If the rate can be expressed by a mathematical equation, the effect of modifying certain conditions may be more evident.

Association News

THE BOSTON SESSION

Hotel Headquarters of the Scientific Sections

The local Committee on Arrangements for the annual session to be held in Boston, June 6-10, 1921, has designated the following headquarters for the sections of the Scientific Assembly indicated:

Sections	Headquarters
Practice of Medicine	Hotel Somerset
Surgery, General and Abdominal	Hotel Lenox
Obstetrics, Gynecology and Abdominal Surgery	Hotel Touraine
Ophthalmology	Hotel Vendome
Laryngology, Otology and Rhinology	Hotel Brunswick
Diseases of Children	Parker House
Nervous and Mental Diseases	Young's Hotel
Urology	Hotel Westminster
Dermatology and Syphilology	Copley Square Hotel
Preventive Medicine and Public Health	Bellevue
Orthopedic Surgery	Adams House
Gastro-Enterology and Proctology	Hotel Essex

Officers of the Subcommittee on Hotels are Dr. John T. Bottomley, chairman, and Dr. Stephen Rushmore, secretary. Communications for the attention of this subcommittee should be addressed to one of these officers at the Boston Medical Library, 8 The Fenway.

CONFERENCE OF THE SECRETARIES OF THE SECTIONS OF THE SCIENTIFIC ASSEMBLY

Under the auspices of the Council on Scientific Assembly, a conference of that council with the secretaries of the several sections of the Scientific Assembly was held at the headquarters of the Association, December 10. There were in attendance members of the Council on Scientific Assembly: Dr. John E. Lane, Dr. E. S. Judd, Dr. F. P. Gengenbach and Dr. J. Shelton Horsley, chairman; and ex officio, the Editor and General Manager of THE JOURNAL and the Secretary of the Association. The several sections were represented as indicated: Practice of Medicine, Dr. H. S. Plummer, chairman, and Dr. Nellis B. Foster, secretary; Surgery, General and Abdominal, Dr. Urban Maes, secretary; Obstetrics, Gynecology and Abdominal Surgery, Dr. Sidney A. Chalfant, secretary; Ophthalmology, Dr. George S. Derby, secretary; Laryngology, Otology and Rhinology, Dr. William B. Chamberlin, secretary; Diseases of Children, Dr. Frank C. Neff, chairman; Pharmacology and Therapeutics, Dr. Leonard G. Rowntree, chairman; Pathology and Physiology, Dr. J. J. Moore, secretary; Stomatology, Dr. Arthur D. Black, secretary; Nervous and Mental Diseases, Dr. Charles W. Hitchcock, secretary; Dermatology and Syphilology, Dr. Harold N. Cole, secretary; Preventive Medicine and Public Health, Dr. W. S. Leathers, secretary; Urology, Dr. H. L. Kretschmer, secretary; Orthopedic Surgery, Dr. H. B. Thomas, secretary; Gastro-Enterology and Proctology, Dr. L. J. Hirschman, chairman.

The sections will meet on Wednesday, Thursday and Friday of the week of the annual session, June 8, 9 and 10, 1921. The Sections on Practice of Medicine; Obstetrics, Gynecology and Abdominal Surgery; Laryngology, Otology and Rhinology; Stomatology; Pathology and Physiology; Nervous and Mental Diseases; Urology, and Preventive Medicine and Public Health will hold their meetings during the morning hours. The Sections on Diseases of Children; Surgery, General and Abdominal; Ophthalmology; Miscellaneous Topics; Pharmacology and Therapeutics; Orthopedic Surgery; Dermatology and Syphilology, and Gastro-Enterology and Proctology will meet during the afternoon hours. Reports were received from each of the sections showing satisfactory progress in the compilation of the programs.

A committee of the Board of Trustees presented the question of active cooperation on the part of the several sections in the Scientific Exhibit. The consensus was that the contemplated cooperation is advisable, and those at the Conference evidenced a readiness to participate in encouraging the presentation of scientific exhibits.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Old Medical School Offered for Educational Use.—The University of Alabama has offered to the Mobile County Board of School Commissioners free use of the old medical school building for educational purposes.

Physician Convicted of Prohibition Violation.—It is reported that Dr. William S. Hansard, Henagar, was recently convicted in federal court on a charge of illegally transporting liquor and was fined $100, and sentenced to four months in the county jail.

CALIFORNIA

Hospital Notes.—The new hospital erected by the Union Oil Company at Orcutt for its employees is ready for occupancy.——Construction work has been begun on the first group of six permanent buildings for the naval hospital at Balboa Park.

Physician Violates Harrison Law.—According to a report, Dr. Amos J. Landis, Chico, pleaded guilty before Justice J. L. Barnes, to a charge of the illegal sale of narcotics. He was ordered to pay a fine of $100 and was given a suspended sentence of six months in the county jail.

DISTRICT OF COLUMBIA

Lepers Under Quarantine.—Dr. William C. Fowler, district health officer, has requested the U. S. Public Health Service to assume responsibility for the care of two lepers now under quarantine in charge of the district health department. The transfer of the lepers has been delayed on account of technical details in the acquirement of title to the national leprosarium in Louisiana.

Fire at Walter Reed Hospital.—A fire at the Walter Reed General Hosital, which destroyed two psychopathic wards, caused the death of one shell shocked soldier and injury to several others. Two hundred men were in the four endangered wards, and seventy of these had to be carried to safety by nurses and other patients. The loss is estimated at approximately $25,000.

Personal.—Dr. Christopher J. Murphy has been appointed a member of the board of surgeons of the police and fire departments to succeed Dr. Henry F. Sawtelle, resigned.——Dr. J. Frank Wallis has severed his connection with the wax model department of the Army Medical Museum and will conduct a laboratory of medical art, specializing in the preparation of moulages of skin and venereal diseases.

Dispensary for Government Employees.—The U. S. Public Health Service has opened a dispensary for the medical treat-

ment of practically all classes of government employees and for men being trained by the Federal Board for Vocational Education. The dispensary is located in Building C of the government group at Seventh and B streets N.W., and serves as an outpatient department of the Public Health Service hospital at Mount Alto. The medical staff comprises twenty-five physicians; Dr. Claude W. Mitchell is the executive officer.

GEORGIA

Personal.—Dr. Alexander S. M. Coleman, Douglas, was elected president of the Eleventh District Medical Association at the recent semiannual meeting in Waycross.

New Hospital Under Construction.—Drs. William C. Pumpelly and George Y. Massenberg, Macon, have under construction a clinic building and sanatorium on Walnut Street, Macon, on grounds surrounding the former Guttenberger home. The hospital will have rooms for twenty-six patients.

ILLINOIS

Personal.—Dr. Wilbur E. Coulter, Seneca, was recently elected president of the La Salle County Medical Society.

Reciprocal Relations Established.—A report from the director of the Department of Registration and Education of Illinois states that reciprocal relations in medical licensure have been established between Illinois and New York.

Branch Laboratory Established.—The state department of health has established a branch laboratory at Ottawa, in charge of Dr. Roswell T. Pettit, to be known as the north central laboratory. Other branches have already been established in Galesburg, Carbondale and Danville.

Chicago

Chicago Tuberculosis Society.—Physicians interested in the study of tuberculosis met, December 16, for the purpose of organizing a special society to be known as the Chicago Tuberculosis Society.

Joint Meeting of Societies.—A joint meeting of the Chicago Medical Society and the Radiological Society of North America was held, December 15. Dr. J. C. Bloodgood, Baltimore, delivered an illustrated address on cases of bone lesions for diagnosis.

Institute of Medicine Elects Officers.—At a meeting of the board of governors of the Institute of Medicine the following officers were elected for 1920-1921: president, George H. Simmons; vice president, C. Judson Herrick; chairman of the board of governors, L. Hektoen; secretary, E. E. Irons; treasurer, J. A. Capps.

INDIANA

Tuberculosis Association Organized.—The Elwood Tuberculosis Association was organized at a meeting held in Anderson, November 30, and the following officers were elected: president, Dr. G. M. Showalter; vice president, A. W. Konold, and secretary-treasurer, Sheridan Clyde.

New Officers of County Society.—The election of officers of the Dearborn and Ohio County Medical Society was held in connection with the annual meeting held in Aurora, December 1. Dr. Francis M. Mueller, Lawrenceburg, was elected president; Dr. John W. Elfers, Rising Sun, vice president; Dr. Edward J. Libert, Aurora, secretary, and Dr. Arthur T. Fagaly, Lawrenceburg, treasurer.

Conference on Mental Hygiene.—At the Indiana Conference on Mental Hygiene, held at the Claypool Hotel, Indianapolis, December 17, Dr. Harold Douglas Singer, director of the Illinois State Psychopathic Institution; Dr. H. H. Goddard, director of the Bureau of Juvenile Research of Columbus; Dr. Albert M. Barrett of Michigan University, and Dr. Arthur H. Estebrook, investigator for the Carnegie Institute of Washington were the principal speakers.

IOWA

Hancock-Winnebago Society.—A tuberculosis clinic and child welfare demonstration was held at Forest City, December 9, under the auspices of the Hancock-Winnebago Medical Society. Dr. Albert H. Byfield, Iowa City, was in charge of the child welfare demonstration and Dr. John H. Peck, Des Moines, and Dr. Lawrence L. Craven, Adel, supervised the chest clinic.

Hospital Transferred.—Dr. William Jepson, Sioux City, has donated a hospital valued at $75,000, with a capacity for sixty patients, to the Northwest Iowa Methodist Conference. The conference proposes to erect a modern hospital with a capacity of 250 beds in the immediate future. The institution was recently dedicated and will hereafter be known as the Methodist Hospital of Sioux City.

KENTUCKY

Laboratory Stations Established.—Redistribution of substations of the health office laboratory of Louisville has been made by the acting health officer. Five new stations have been established.

New Health Officer of Louisville.—The Board of Public Safety has appointed Dr. E. Ellis Owen as health officer of Louisville, to succeed Dr. Thomas H. Baker, deceased. Drs. Sidney J. Meyers, Benjamin C. Frazier and Ellis S. Allen have been appointed members of an advisory committee to cooperate with the Jefferson County Medical Society and the state board of health.

LOUISIANA

Personal.—Dr. E. E. Evans has been appointed superintendent of the East Louisiana Hospital for the Insane, Jackson.

Hydrophobia at Church Point.—It is reported that thirty-two persons from Church Point, Acadia Parish, are under treatment for hydrophobia at the New Orleans Charity Hospital. The disease has been traced to a farmer living near Church Point, who supposedly contracted it from a horse which he had been treating.

New Tuberculosis Sanatorium Dedicated.—The new buildings at New Pines on Greenwood Road, near Shreveport, which will serve as a sanatorium for the treatment of tuberculous patients, was dedicated by formal exercises, December 4. The sanatorium with its auxiliary structures represents an investment of over $100,000, and includes a cottage donated by the Standard Oil Company of Louisiana. The grounds, comprising 54 acres of land, were donated by Col. J. B. Ardis and his family.

MARYLAND

Reconstruction of Johns Hopkins Hospital.—Plans have been completed by the trustees of Johns Hopkins Hospital for the reconstruction of the hospital group, which will involve an investment of approximately $11,500,000, including $6,750,000 as a permanent endowment fund. The first unit will be started next summer by the erection of a new pathologic building, costing $600,000, to replace the structure destroyed by fire last winter.

Plans for City Hospital.—Four suggestions as to the steps which the city should take toward the establishment of a municipal hospital for communicable diseases out of the bond issue of $750,000 authorized by popular vote have been made by Dr. C. Hampson Jones, commissioner of health. (*a*) A hospital of sufficient capacity for the segregation and care of persons suffering from ordinary communicable diseases; (*b*) a segregation hospital for advanced cases of tuberculosis; (*c*) a hospital for venereal diseases, and (*d*) a hospital for cases of smallpox and other diseases commonly considered quarantinable by the U. S. Public Health Service at ports of entry. A hospital for venereal diseases is provided by the purchase by the city of the former Hahnemann Hospital, now the Morrow Hospital.

NEW YORK

New Hospital for Albany.—A million dollar hospital will be erected to take the place of the present St. Peter's Hospital in Albany. Funds for the institution will be donated by Mrs. James C. Farrell in memory of her husband, and the hospital will be known as the James C. Farrell Memorial Hospital.

Tuberculosis Society Organized.—The Steuben County Tuberculosis Association was recently organized at Corning, with the following officers: president, L. H. Brown, Hammondsport; vice presidents, A. J. Aaronson, Canisteo, R. L. Allison, Corning, and Dr. John A. Conway, Hornell; secretary, Mrs. W. W. Clark, Wayland, and treasurer, B. Frank Towne, Corning.

New York City

Cardiology Society Organized.—At the first meeting of the Brooklyn Cardiological Society, held November 29, the following officers were elected: president, Dr. William J. Cruikshank; vice president, Dr. Glentworth R. Butler; secretary, Dr. William W. Laing, and treasurer, Dr. Frank Bethel Cross.

Anthrax Cases During 1919 and 1920.—The *Monthly Bulletin* of the department of health for November presents an

investigation of thirty-four cases of human anthrax occurring in New York City from Jan. 1, 1919, to Oct. 1, 1920, as compared with seventy-four cases from 1900 to 1918. Of the thirty-four cases eleven proved fatal.

Joint Meeting of Surgical Societies.—A joint meeting of the New York Surgical Society and the Philadelphia Academy of Surgery was held in Hosack Hall, New York Academy of Medicine, Dec. 8, 1920. Dr. William Downes, New York, presided, and papers were read by Dr. Eugene H. Pool, New York, on "Suppurative Pericarditis (Pericardiotomy)," and by Dr. John B. Deaver of Philadelphia on "Gastro-Enterostomy in Perforated Ulcer of the Stomach and Duodenum."

NORTH CAROLINA

Personal.—Dr. Robert S. Bailey, Orangeburg, S. C., has been appointed health officer for Henderson and Vance County to succeed Dr. Edwin J. Kehoe, resigned.

Medical Society Opposes State Medicine.—The Guilford County Medical Society at its meeting in November adopted resolutions endorsing the educational health campaign of the North Carolina State Board of Health, but voicing its belief that a therapeutic campaign under auspices of the board is not advisable, on the ground that the licensed physicians of North Carolina are fully qualified and of sufficient number to care for all indigent sick. The campaign instituted by the state board of health for the removal of tonsils and adenoids is held to be unnecessary and expensive, and to tend to reflect on the willingness of the qualified physicians to care for these cases, and the operations have generally been performed at places unsuitable for surgical procedures. Many persons who are able to pay have been treated at public expense. Dr. Watson S. Rankin, Raleigh, secretary of the state board of health, has issued a public reply in justification of the campaign.

OHIO

Tuberculosis Dispensary at Niles.—The Trumbull County Tuberculosis Society has acquired rooms in the Armstrong Block, Niles, for the purpose of establishing a free dispensary. Clinics will be held each Wednesday afternoon at 3 o'clock.

Personal.—Dr. D. F. Garland has resigned his office as city welfare director of Dayton after seven years of service.——Dr. Francis B. Norton has tendered his resignation as police surgeon of Cleveland.——Dr. John P. Harbert has established a free surgical clinic and outpatient clinic at the eye, ear, nose and throat hospital on North Main Street, Bellefontaine.——Dr. Gilbert E. Robbins has been elected health commissioner of Chillicothe for a term of two years.

New Officers of County Societies.—At the annual meeting of the Tri-County Medical Society held at Van Wert, November 23, the following officers were elected for 1921: president, Dr. David H. Richardson, Celina; vice president, Dr. Lloyd M. Otis, Celina, and secretary-treasurer, Dr. Milton L. Downing, Rockford.——The Ottawa County Medical Society has elected the following officers: president, Dr. Arthur A. Brindley, Port Clinton; vice president, Dr. Henry Longholtz, Oak Harbor, and secretary-treasurer, Dr. Stuart T. Drumgold, Elmore.

OREGON

Construction of Medical School Delayed.—Construction work on the buildings for the University of Oregon Medical School was indefinitely delayed by a landslide which completely buried the roadway leading to the school buildings. Employees of the university and city employees of Portland are engaged in clearing the obstruction.

Hospital Notes.—The new building of the Salem Deaconess Hospital will be ready for occupancy by Christmas.——Plans and specifications have been completed for the proposed new building of the Portland surgical hospital, to be erected on North Twenty-First Street, Portland. The structure will be of concrete, three stories high, and will cost approximately $50,000.

PENNSYLVANIA

Regulation of Sale of Clinical Thermometers.—According to an opinion of B. J. Myers, deputy state attorney-general, the advisory board of the state health department has the power to regulate the sale and testing of clinical thermometers of Pennsylvania if the members deem it necessary for the protection of the health and lives of the people of the state.

Personal.—Dr. Edward Martin, state commissioner of health, has accepted an appointment as consulting physician for the division of hygiene and engineering of the State Department of Labor and Industry.——Dr. Charles H. Keene, Boston, has been appointed director of the bureau of health and instruction for the public and normal schools of the state.——The following appointments were recently announced by the state commissioner of health: Dr. Albert P. Francine, Philadelphia, to be chief of the division of tuberculosis dispensaries; Dr. Ellia I. Rynkiewicz, Shenandoah, clinician of the state prenatal clinic in Shenandoah; Dr. Edgar R. Biedleman, chief of the genito-urinary clinic at Bethlehem, and Dr. Stewart E. Rauch, assistant; Dr. Charles H. Swenk, Sunbury, chief of the child health clinic in Northumberland County, and Dr. John Henry Stearns, Stroudsburg, chief of the Monroe County Genito-Urinary Clinic.——Dr. Thomas W. Jackson, assistant to the state health commissioner, has obtained leave of absence for one year for the purpose of engaging in public health work in South America, under the auspices of the Rockefeller Foundation.——Dr. J. W. McMullen, Harrisburg, has been appointed chief of the tuberculosis clinic in Harrisburg, and Dr. George O. Keck, director of the Mont Alto Sanatorium.——Dr. Albert M. Redelin, Freeland, has been elected assistant surgeon of the Coaldale State Hospital, to succeed Dr. William A. Weaver, Philadelphia, resigned.

Philadelphia

Health Council Tuberculosis Work.—Under the direction of the Philadelphia Health Council and Tuberculosis Committee six clinics are maintained for the treatment of sick and debilitated children. Open air classes are conducted in the public schools and milk is supplied to undernourished children attending these classes. At the portable clinics in the recreation centers and playgrounds the children in attendance are given special examinations. Open air camps are also under operation.

Personal.—Drs. Lynnley G. Smith and Harry B. Fish have been appointed assistants in the genito-urinary clinic, Philadelphia, by Col. Edward Martin, state commissioner of health.——On the occasion of his eighty-fourth birthday, January 20, a dinner and reception will be given in honor of Dr. W. W. Keen, emeritus professor of surgery of the Jefferson Medical College, at the Bellevue Stratford Hotel. A life size bust of Dr. Keen will be presented on behalf of numerous medical, scientific, and civic organizations and of his friends in Philadelphia and elsewhere. Written individual tributes testifying to Dr. Keen's contributions to the science, art and literature of medicine, to his record in the Civil and following wars and to the high esteem in which he is held, will be incorporated in a bound volume to be presented at the dinner.——Dr. James Darrach, only survivor of the class of 1849 of the University of Pennsylvania and one of the oldest retired practitioners of the East, passed his ninety-second birthday, December 7. During the Civil War he was chief surgeon of the Germantown Hospital and he was among the first in Philadelphia to employ the microscope in research work.——Dr. John S. Shearer of the department of physics of Cornell University lectured December 9 at the Franklin Institute on "Recent Advances in the Production and Application of Roentgen Rays."

SOUTH CAROLINA

Fire at Government Hospital.—Fire at the U. S. Public Health Service Hospital at Camp Sevier, December 1, partly destroyed two wards and threatened the safety of about seventy patients. All patients were safely removed from the burning buildings and no injuries were reported.

Health Museum Holds Exhibition.—A model of a tuberculosis camp has been placed on exhibition in the Charleston museum by direction of the curator, Dr. George McF. Mood. Other public health material has been loaned to the museum for the special exhibition by Dr. James A. Hayne, Columbia, chairman of the state board of health.

TEXAS

Public Meeting of County Society.—The Denton County Medical Society held an open public meeting, December 7, at the first Christian Church at Denton. Addresses on topics relating to public health were delivered by Dr. Bacon Saunders, Fort Worth, Dr. James I. Terrill, Dallas, and Dr. Agnes Hopkins, Dallas.

Society Names Cisco Board of Health.—In conformity with the municipal ordinance of Cisco which stipulates that the Cisco Medical Society shall select the three members of the city board of health, the following physicians were named at a recent meeting of the society: Drs. J. E. Clarke, William P. Lee and Kincy J. Scott.

GENERAL

Weldon Medal Award.—The Weldon Medal has been conferred by the University of Oxford on Dr. J. Arthur Harris of the station of experimental evolution of the Carnegie Institution of Washington in recognition of his work in biometry.

Fraternity Elects Officers.—At the annual meeting of the Kappa Psi Medical Fraternity, held recently at Louisville, the following officers were elected: regent, Dr. James D. Reeder, Baltimore; vice regent, Dr. Victor J. Anderson, Chicago, and secretary-treasurer, Dr. Watson W. Eldridge, New York.

Liquor Regulations Extend to American Ships.—According to an opinion of the attorney-general of the United States, addressed to the Secretary of the Treasury and incorporated in Treasury Decision 3098, "the provisions of the National Prohibition Act extend to American ships, whether in American waters, on the high seas or in foreign waters."

Laboratory Cars for Mine Rescue Purposes.—The U. S. Public Health Service has assigned two traveling laboratory cars to the U. S. Bureau of Mines for aid in mine rescue work. The laboratory car "Hamilton" will be stationed at Terre Haute, Ind., and the "Wyman" will be utilized for field work.

Fraternity Convention.—The annual convention of the Alpha district of the Phi Chi Medical Fraternity will be held in Boston, Jan. 3 and 4, 1921, at the fraternity headquarters, 144 Huntington Avenue. Clinics will be held by prominent clinicians at Massachusetts General, Boston City, Carney, and the Salvation Army hospitals. A reception, smoker and banquet will be given at the Hotel Vendome on the evening of January 3.

Standard of Height and Weight of Children.—A conference was held in New York, December 3, for the purpose of adopting a uniform table of weight and height of children at various ages. The following organizations were represented at the meeting: American Child Hygiene Association; Child Health Organization; U. S. Bureau of Education; U. S. Children's Bureau; Elizabeth McCormick Memorial Fund; Nutrition Clinics for Delicate Children; U. S. Public Health Service, and School of Public Health of Yale University.

Science Association to Hold Meeting.—The seventy-third meeting of the American Association for the Advancement of Science will be held in Chicago, Dec. 27, 1920, to Jan. 1, 1921, under the presidency of Dr. L. O. Howard, Washington, D. C. The retiring president, Dr. Simon Flexner, New York, will deliver an address on "Twenty-Five Years of Bacteriologic Research, a Fragment of Medical Science," at Mandel Hall, December 27, 8 p. m. Headquarters of the association will be at the Congress Hotel, and registration at the Reynolds Club, University of Chicago, Fifty-Seventh and University Avenue.

Bequests and Donations.—The following bequests and donations have recently been announced:

University of Colorado, a gift of $700,000 for the construction of a medical school and hospital, by the General Education Board of the Rockefeller Foundation.

Rockingham Hospital, Bellows Falls, $10,000, by the will of Charles E. Howard, Bellows Falls, Vt.

Madison General Hospital, $25,000, by the will of Dr. Charles H. Vilas, Madison, Wis.

Flower Hospital and the Ophthalmic Hospital, New York, and Greenwich (Conn.) Hospital, each $150,000, by the will of Commodore Elias C. Benedict.

Conference on Venereal Diseases.—The All-America Conference on Venereal Diseases and Social Hygiene, held in Washington, D. C., December 6-11, was the first of a series of meetings in the international campaign against social diseases. The second meeting will be held in May, 1921, at Copenhagen, Denmark, and will be attended by representatives of all the Scandinavian nations, Holland and Great Britain. Subsequent conferences will be called at Paris and London, one or both of which, presumably will be attended by delegates from Germany. In his presidential address Dr. William H. Welch pointed out that only within the last few years had knowledge of these diseases progressed far enough to make such a gathering possible. Today, medical knowledge is sufficient to exterminate these diseases; and it is only necessary to educate the public to lend cooperation and to combat the sham modesty that forbids the mention of these diseases. The program of the conference was divided into twelve groups dealing with all phases of the subjects. The following were official delegates from countries of the Western Hemisphere: Dr. A. da Fonseca, Brazil; Dr. C. Masi, Paraguay; Dr. José S. Salas, Chile; Dr. Francisco del Valle Atiles, Porto Rico; Drs. Tomás G. Perrin and A. B. Vasconcelos, Mexico; Dr. Alfred Figueras Ballester, Cuba; Dr. Manual Zúñiga Idiaquez, Honduras; Dr. J. A. Amyot, Canada.

LATIN AMERICA

Trial of a Leprosy "Cure."—The government of Cuba has authorized Dr. Modesto Gómez Rubio to try during three years a leprosy treatment on sixty patients selected from the hospital for lepers.

Public Health Appropriations in Chile.—The council of the state of Chile has granted appropriations of 150,000 pesos to the Infant Welfare Association, 100,000 pesos to the Hospital de Concepción, and 500,000 pesos for the control of infectious diseases.

Medical Congress of Uruguay.—Preparations for the National Medical Congress, to be held at Montevideo in April, 1921, are well under way. The organization committee includes Dr. Bernardo Etchepare, president; Dr. Carlos Butler, vice president; Dr. Camilo Payssé, secretary; Dr. Enrique Méndez, treasurer, and Dr. Gilberto Pegules, librarian.

Special Tax in Uruguay for Antisyphilis Campaign.—The *Boletin* of the national public health service in Uruguay has the text of a law imposing a tax of 1 centésimo per hectare on grazing lands, the income to be devoted to the prophylaxis of syphilis throughout the country, founding of dispensaries and laboratories, and the organization in the capital of a museum with wax models of the different manifestations of syphilis, for educative purposes.

FOREIGN

Royal Society Elects.—At the annual meeting of the Royal Society, November 30, Dr. C. S. Sherrington, Wayneflete professor of physiology at the University of Oxford, was elected president, to succeed Sir Joseph Thomson.

Physicians Elected to Italian Senate.—Two more physicians have been elected to the Italian senate, Dr. G. Sanarelli and Dr. N. Badaloni. The former has been professor of hygiene at the University of Rome since 1915 and has had twenty years of service in the lower house. Badaloni is professor of pathology at the University of Naples.

Italian Federation of Brain Workers.—The first congress of representatives of scientific, pedagogic and other associations of intellectuals was held recently at Rome. The spirit of organization is in the air, one of the speakers said, and there is no reason why brain workers should not unite to further their material as well as scientific interests. The federation was founded eight months ago and includes editorial workers, men of all professions and officials. Social insurance in favor of brain workers was one of the topics discussed, and the importance of thorough organization in each group and subgroup.

Teaching the History of Medicine.—A historical medical museum is being planned at Rome, and the University of Geneva, Switzerland, has recently founded a professorship for the history of medicine. Such chairs have already been installed at Paris, London, Edinburgh and Berlin. Spain commissioned Dr. Albiñana of Madrid to study historical medical relics in different countries, and he has been delivering recently a course of public illustrated lectures on the subject. The *Siglo médico* gives the details of the topics presented in the four lectures based on the museum collections, etc., in France, Belgium, Holland and England besides Spain.

Antiquackery Meeting.—The annual meeting of the Netherlands Antiquackery Society was held recently at Amsterdam. Among the subjects discussed was a proposal to have a printed label to be pasted on nostrums as they are sold, warning the purchaser that the remedy in question is not a cure. Prof. van der Wielen said that sixty pharmacists had promised their cooperation in the matter. A resolution was adopted in favor of the project and a committee appointed to prepare the labels for different classes of nostrums. One of the members exhibited an unopened bottle of a nostrum which contained a beetle and another insect, and stated that he was going to place the bottle in a show window at the busiest corner in Amsterdam.

Deaths in Other Countries

Dr. **G. von Bunge,** professor of physiology at the University of Basel, aged 76.——Dr. **E. Bloch,** professor emeritus of otology at the University of Freiburg, aged 73.——Dr.

V. **Carlier,** professor of urology and pathology at the University of Lille.——Dr. **J. Coelho de Miranda Leão,** chief of the public health service in the Amazonas district of northern Brazil, a founder and officer of the Sociedade de Medicina e Cirurgia do Amazonas, and a pioneer in research on regional helminthiasis, aged 51.——Dr. **N. Lugo-Viña** of Cienfuegos, Argentina.——Dr. **L. Valdes de la Puente** of Havana, aged 69. ——Dr. **Karl Toldt,** professor emeritus of anatomy at the University of Vienna and author of manuals and an atlas of human anatomy, and of numerous publications on the development of the gastric and other glands and the embryology of the genital organs and on comparative anthropology, aged 80.

CORRECTION

Relation Between Suprarenal Function and Tuberculosis. —In the abstract of the article by Drs. Hartwell and Ryder, THE JOURNAL, November 27, p. 1520, the concluding sentences should read: "There was also progressive hyperplasia of the suprarenals corresponding to the duration of the tuberculous infection and this was true both in the pigs which had been operated on and in the controls. This suggests a demand for increased suprarenal function in tuberculosis."

Government Services

Medal Awarded to Surgeon-General Ireland

The silver medal of the Serbian Red Cross has been awarded to Surgeon-General Ireland for services which he rendered in relieving distress among the sick and wounded of the Serbian nation.

Resignation of Public Health Service Officers

Notwithstanding temporary increases in pay granted by Congress, the Public Health Service, in common with the Medical Corps of the Army and Navy, is having difficulty in securing candidates to maintain its regular staff of officers. During the last year the resignations among its personnel have exceeded the admissions.

Study of Health Conditions in United States

Surgeon-General Cumming, U. S. P. H. S., has inaugurated a campaign for the study of health conditions in the various states. Officers will be assigned for temporary duty to investigate the public health activities in given states, and to study the laws and regulations in force throughout the country. Asst. Surg. E. C. Williams was recently assigned to the office of the governor of Arizona to cover this new phase of work in that particular state.

Provision for Tuberculosis Patients

The Public Health Service has purchased 2,500 sheep-skin coats for the use of patients suffering from tuberculosis in hospitals located in every part of the country. The coats, which are heavy and wind-proof, will make it possible for patients in these institutions to spend the greatest part of the time in the open air during the winter months. They have already been distributed to the Public Health Service hospitals.

Department of Public Welfare

A bill—Senate Bill 4542—to create a department of public welfare has been introduced in the Senate by Senator Knox for Senator Medill McCormick. It provides for a secretary of public welfare who shall be a member of the cabinet, and would take over the Public Health Service and Bureau of War Risk Insurance from the Treasury Department; the Children's Bureau and Women's Bureau from the Department of Labor; the Bureau of Education, St. Elizabeth's Hospital, Freedmen's Hospital, Bureau of Pensions, and Indian Service from the Department of Interior; it would abolish the U. S. Employees' Compensation Commission and transfer its functions to the Bureau of Pensions; it would abolish the Interdepartmental Social Hygiene Board and transfer its functions to the Public Health Service, and would take over the National Home for Disabled Volunteer Soldiers and the Columbia Institution for the Deaf, Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 20, 1920.

The Therapeutic Value of Music

The Society of Vocal Therapy was founded two years ago to provide teachers for the instruction of soldiers and ex-soldiers in breathing and singing under medical supervision. At the second annual meeting of the society, Lieut.-Col. Sir Frederick Mott gave an address on the influence of music on body and mind. He said that early in the war two cases of shell shock in which there was complete loss of memory came under his notice, which showed that musical memory returned earlier than other forms of memory—or, rather, the power of recollecting past experiences. He found that soldiers suffering with shock who had been singers or players of the piano were able to remember and sing songs or play pieces they had learned on the piano, and yet could not remember experiences connected with their daily vocations or surroundings. Again, men who were mute from the same cause would at a concert suddenly regain their speech by joining in the chorus of some well-known song. Of all the arts, music appealed most to the emotions, and probably words associated with music were more stably organized in the mind, owing to the musical origin of the language of the emotions. There were, broadly speaking, two laws of psychologic association in memory: association by contiguity, and association by similarity. In singing there there was a contiguous association of musical cadence and articulate speech. There was reason to suppose that the utterance of vocal inarticulate sounds of varying pitch was in evolution much older than articulate speech and that, whereas the production of such sounds could be initiated in both halves of the brain, articulate language in right-handed persons could be initiated only in the left half, which controlled voluntary movement of the right half of the body. He quoted the case of a soldier who suffered from aphasia and right hemiplegia following a gunshot wound of the left side of the brain. The bullet passed through the speech center and also blinded him. He understood what was said to him, but could express judgment only by "Ah" and "Oot," which corresponded to "Yes" and "No." He could, however, sing several songs through without difficulty, provided the first word or bar of the music was given to him. When the song, "'Tis a long way to Tipperary" was hummed to him, he started the well-known chorus, winding up with: "Are we downhearted? No." But on being then asked to say "Tipperary," he replied, "Oot," and could not utter any of the words. Sir Frederick concluded that the song must have been repeated so often as to have become organized in both halves of the brain or in the subcortical lower centers. A month later he could speak. The aims of the Society of Vocal Therapy are the promotion through speech and song and efficient breathing of the physical and mental health of the sick, wounded, and disabled service men, by the most effective methods of individual and class training. The society also trains both voluntary and paid teachers.

The Physician's Dilemma in a Case of Suspected Poisoning

The dilemma of a physician who suspects that his patient is being poisoned but has no evidence sufficient to act on has often been discussed. A story that appeared recently in *Truth* illustrates one means of solution. It is given on the authority of Dr. Russell of Glasgow: A physician of his acquaintance was attending a woman suffering from a mysterious ailment. After long and anxious observation he came to the conclusion that the patient was being poisoned,

but he had no tangible proof. After privately advising with his friends, he did not report the case to the police, and ultimately the woman died. The tragedy is of a kind well known to many physicians. The physician is called in by a man or a woman of good position and the highest reputation to prescribe for a relative who is suffering from some inscrutable disease. He examines the patient again and again and can make nothing of the case. Then it suddenly occurs to him that the symptoms suggest poisoning. He then asks for the advice of a consultant. Probably the consultant, who has not studied the case so minutely, sees nothing suspicious. Even if he does, he too is faced by the same terrible dilemma. If he reports to the police and fails to prove that poison is being administered, he is a ruined man: if he does not, he may be an unwilling party to a horrible murder. As a way out of the dilemma Dr. Russell repeats a story told him many years ago by the late Professor Hunter, who was then a lawyer of some standing and one of the members of Parliament for Aberdeen:

One morning a fellow countryman came to his chambers in the Temple in great distress. He said that he had been for some time attending a certain gentleman of wealth and position. At first he was greatly puzzled by the case; but gradually he had become convinced that the patient was being poisoned. "I can't prove he is being poisoned," he said, "so this is my position: If I report the case to the police the poisoning will stop, the man will recover, and I shall be ruined. If I don't report it, the poisoning will continue, the man will die, and I shall be a kind of party to his murder." "Whom do you suspect?" asked Hunter. "That is just my difficulty," replied the physician. "I can't suspect any one. He married only quite recently a young and charming woman, who is absolutely devoted to him. She insists on nursing him herself—sleeps on the sofa and watches over him like an angel. Her distress about his illness is painful to witness." Professor Hunter thought for a moment and then gave advice which the sequel will show. That evening, when the physician called, the wife, as usual, was deeply concerned. When he had finished his examination they left the sick room together. "Don't you think, doctor," she said, hopefully, "that he is a little better today?" "No, madam," replied the physician gravely, "I think that he is worse." A look of deep distress came over her face. "It is a very peculiar case, madam," he went on, looking straight into her eyes, "so peculiar that if I did not know that everything he eats and drinks is being prepared by yourself, I should fear he is being poisoned." The wife turned deadly pale, but made no answer. Within a fortnight he was well, and within a month she had run away with another man.

The Public Health

The last autumn has been one of the healthiest on record. Infant mortality during the months July, August and September dropped to the abnormally low rate of 65 per thousand births, the lowest on record. There has been a wide outbreak of scarlatina and diphtheria, but both diseases are of an extremely mild type and their mortality has been far lower than usual. At present there is no sign of an epidemic of influenza, a disease that seems to come and go in a mysterious manner and has been responsible in recent years for much mortality.

The Australian Medical Congress which recently met in Brisbane, Queensland, considered a list of resolutions sent forward by various sections. Among those adopted were: From the section of naval and military medicine and surgery, an expression of opinion that the real principles that underlie the success of the military health administration during the great war could be readily adapted to civil life, these principles implying control by a central commonwealth authority, the granting of a maximum autonomy to the local health authorities, and the organization of the medical profession, so that each member has his part in the public health organization; the advancement of research, and lastly education, by requiring among other things that trainees under the defense scheme shall study sanitation.

The Congress also accepted a recommendation from the dermatology section, suggesting the appointment of a committee to report on the occurrence of skin cancer in Australia. A resolution from the public health section, urging the establishment of a mosquito eradication campaign was also adopted. Other resolutions forwarded by this section, and adopted by the congress, included a proposal that a chair of preventive medicine be established in the medical school of each Australasian university, and also a proposal that hygiene be taught in all classes in all schools, as well as a proposal that laboratories be established at the principal centers of extrametropolitan population throughout the commonwealth.

Atmospheric Pollution

The Advisory Committee on Atmospheric Pollution, appointed by the British Meteorological Office, has issued its sixth annual report, which has been reprinted in the *Lancet*. It is based on observations made in the large towns. The present report shows a marked diminution of smoke pollution, which is attributed to the increasing use of gas fires. It is shown that there is a cycle in the distribution of impurities in the air during the twenty-four hours. At about 6 a. m., when fires are lighted, the impurities begin to increase, and this continues until 11 a. m. From this hour until about 10 p. m. the quantity varies little from hour to hour, but at the latter hour it rapidly diminishes and almost disappears by midnight. The highest mean monthly deposit of impurities for the year was registered in London and amounted to 15.35 metric tons per square kilometer.

BELGIUM

(From Our Regular Correspondent)

Nov. 23, 1920.

Prophylaxis of Venereal Disease

In previous letters I have mentioned the various measures adopted by the government to combat the inroads of venereal disease. As is well known, free treatment for patients of limited means has been made possible by the establishment in every large center of a certain number of competent physicians who are empowered to distribute gratuitously the needed remedies. However, the selection of physicians on the part of the government has, it is asserted, been inadequate and has given rise to grave charges from specialists. The societies for dermatology and urology have become aroused over the matter, and at their October meeting they passed a resolution, which is intended to serve as a general appeal and a plan for the reform of the present régime.

The Société belge de dermatologie et de syphiligraphie and the Société belge d'urologie hold the view that the campaign against venereal disease should take cognizance of all the means of action that are brought to bear against the various types of venereal disease, such as syphilis, gonorrhea and chancroid. They believe that prophylaxis should, for the present, be based chiefly on therapeutic measures, that the venereal campaign should not be undertaken except with the collaboration of all physicians, and that it is the duty of the government to pass the necessary legislation requiring every graduate in medicine to give evidence of his ability to handle venereal diseases. For the benefit of physicians who wish to gain a practical knowledge of the treatment of venereal disease, specially equipped centers of instruction should be established in great numbers. An examining board should be created before which all physicians so desiring could give

evidence of their special fitness to treat venereal cases. A special certificate would be issued to those satisfying such examining board in regard to their competence.

At present there are various places where venereal patients may secure the needed treatment. These are in the form of polyclinics, offices of charity boards, and consultation hours in municipal shelters and in free dispensaries, all of which have shown what they can do in furtherance of the antivenereal campaign. On these various institutions, therefore, devolves the duty of organizing such general measures as are needed to increase the efficiency of their endeavors in the struggle in question. Furthermore, it is a matter of general interest that an ample system of centrally located units fully equipped for the antivenereal campaign be organized at once in order to multiply the centers of influence and of action. The purpose and effect of such a system will not be to deprive the general practitioner of any part of his clientage. The idea is to give to the private practitioner the means of making a more certain diagnosis, and to give him all the instruction he may need to carry out the treatment in a satisfactory manner. It is desirable that, on request of physicians, venereal remedies be distributed gratuitously to persons of inadequate means. As a basis for present needs the societies suggest the following remedies: mercurials, iodids, preparations of arsenic (arsphenamin and neo-arsphenamin), potassium permanganate, mercuric oxycyanid, mercuric chlorid, silver salts, vaccines, etc.

At a special meeting to be held each year the two societies will issue a report in regard to the remedies to be employed in the antivenereal campaign. At this annual meeting the societies will appoint certain representatives to report on the subject for the ensuing year.

War Cripples

In the various countries that took part in the war there are unfortunately a large number of men so badly crippled or mutilated that they can make little practical use of the activity that they still possess. The various governments bestow on men thus seriously disabled the greatest care and attention. The interallied conference held in Brussels passed several resolutions concerning this class of pensioners. One resolution proposed a plan for the establishment for their use of groups of small detached cottages. For certain classes of patients, and more particularly for neurotics, sanatoriums provided with special workshops seem indispensable. Great importance is attached to work as a moral factor, and the feeling of a certain relationship, be it ever so slight, with the social body as a whole fills the heart and mind of these men with just pride, and their faith and hope in life are thereby preserved. These special workshops might be under the control of the central government (Dronsart's proposal), in separate institutions to be newly established, or they could be made special departments of the existing schools for the retraining of soldiers. It might be still better to turn them over to private interests by whom home work could be organized, or to corporations, assisted by a committee composed of patrons of the undertaking.

Agricultural colonies on market gardens might also be provided. Prof. Oreste Bellotti advised including in this class those who had suffered grave deformities of the face. They could be hospitalized in special institutions, which for agricultural workers could take on the form of rural colonies. In England, putting different classes of disabled men together in the same colonies has been found to work out satisfactorily.

The Nobel Prize

The Nobel prize in medicine has been bestowed on Dr. Bordet, director of the Pasteur Institute of the province of Brabant and professor in the Université libre de Bruxelles. Bordet is the author of the work on immunity to which the press has accorded so much praise. No one was better qualified than he to write on this subject, to which he has himself made many important contributions.

Bordet was born in 1870 and was graduated in medicine at the age of 22. In 1893 he received a traveling scholarship and the following year went to Paris, where he practiced in the Pasteur Institute in the services of Drs. Roux and Metchnikoff. In 1901 he was appointed director of the Pasteur Institute at Brussels. It is a known fact that Bordet is, in the main, the discoverer of the reaction termed deviation of complement, which goes by the name of the Wassermann reaction. For some time, however, there has been noted in European bibliography a tendency to correct this error, and we are coming to speak of the Bordet-Wassermann reaction.

In 1909 Bordet discovered the microbe of pneumonia in cattle. Several prizes have been awarded him in the past. Of late he has been directing the campaign against the cattle plague in Belgium, the terrible pestilence that has threatened all Belgium cattle but which at present seems to be definitely checked. Since the king returned from Brazil he has given evidence of his admiration for the illustrious professor by addressing to him his heartiest congratulations.

A New Medical Journal

The spirit of sectionalism, which was rampant before the war and threatened to paralyze all forms of enterprise in Belgium, is again beginning to get the upper hand. At the time of the armistice all the local medical journals, which serve no other purpose than to scatter our efforts, had disappeared, but behold, one after another they are rising from their ashes. The attempts made by the *Scalpel* to bring all the activities of the Fédération médicale belge under control have not been crowned with the success that was expected, and at present all medical faculty centers are establishing their own local journals. Brussels alone was conspicuous in not being represented by any journal of importance. So far as there may be said to have been a lack (for, personally, we persist in believing that a union of all local organs would constitute real progress), the want has been supplied in most excellent fashion. A new monthly bearing the name *Bruxelles-Médical* has appeared in a presentable form and is edited in a satisfactory manner considering the high cost of everything. Its purpose is essentially a practical one and it addresses itself to the general practitioner. Among its patrons and supporters we find the names of Bordet, Depage, Willems, Zunz and Fredericq, and among its foreign contributors I may mention Bard, Duval, Carrel, Faure, Putti, Macewen and Keen.

MEXICO CITY

(From Our Regular Correspondent)

Nov. 20. 1920.

National Academy of Medicine

After the usual vacation, the National Academy of Medicine began its fifty-seventh year, October 1, by a solemn session, presided over by the acting secretary of the interior, who represented the president of the republic. This session was also attended by the rector of the university. After a review of the work done by the members during the year, the usual elections of officers were held. Those elected were: Dr. D. Nicolás León of the section of history of medicine, who was appointed vice president, and J. Izquierdo of the section of physiology, second secretary. The presidency will be discharged by the former vice president, Dr. Germán Díaz Lombardo of the section of urology, and the position of first secretary will be occupied by Dr. Jesús Arroyo of the section

of internal medicine. As the thesis presented by Dr. D. Ramón Pardo on "Sensorial Chiasmas" was approved, he was elected corresponding member in the city of Oaxaca, where he has also been professor of anatomy and director of the institute of science. The department of the interior has received with approval the resolution that the hospital general, the most important Mexican center for clinical teaching, should be under the jurisdiction of the school of medicine, and it is expected that this will soon be done.

Protest by Medical Students

Pedro José Zepeda, a citizen of Nicaragua, who has lived in the United States and other countries and who alleges to be a physician, asked to be examined by the school of medicine. To the great astonishment of all those who witnessed the examination, in which the applicant showed his complete ignorance of medical science, he was licensed by the board. This caused a most vigorous protest on the part of many students. These stated that such action would hurt the university and also that the examination had been illegal, as one of the members of the board had taught the applicant privately. The students therefore demanded the annulment of the examination and of the diploma of physician and license already granted to Zepeda. The university officers considered the matter, and after studying a report by Dr. J. González Urueña, Pharmacist Roberto Medellín and Lic. Alfonso Caso, rendered a decision favorable to the students' petition. They based their action, however, on legal reasons, which differed from the students' assertions. Zepeda's examination has therefore been annulled and his diploma recalled. The behavior of the professors who took part in the examination has been unfavorably commented on, and the medical students deserve praise for their action.

Beginning of the Competitive Examinations

As previously announced, it was decided to fill certain chairs of the school of medicine by means of competitive examinations. These examinations were not very successful because of the small number of applicants, and other reasons. Thus far only one professor has qualified in this way, Dr. Ernesto Cervera, who applied for the position of professor of microbiology and had no competitors. Even in his case some criticisms are heard of the fact that, while competitive examinations were held for the chair held by Cervera, who enjoys a high reputation and has filled his position during five years, on the other hand there are appointed as full-fledged professors individuals who really are a hindrance to the progress of the institution or are even physically unfit as, for instance, a professor affected by deafness. It might be well that the heads of the school should act otherwise or not act at all if they cannot follow the example of Licéaga or Angel Hidalgo, former directors, who should always serve as models.

BUENOS AIRES

(From Our Regular Correspondent)

Nov. 9, 1920.

Surgery Institute

The cornerstone of the Institute of Surgery, the construction of which was ordered recently by the government, has just been laid. Work on the building will be begun immediately at an estimated cost of $400,000. The surgery service, which will occupy this building, is that in charge of Prof. José Arce, who has sailed for Europe.

Union of Medical Societies

During recent years there has been a tendency to federate all national medical societies. Federation has been largely brought about through the creation of the Argentine Medical Association, but it has not been possible to make some societies join the latter, owing either to the fact that they limit the numbers of members (societies of surgery, obstetrics and gynecology) or to an extreme spirit of independence (society of pediatrics). In view of the present tendency, however, it seems unavoidable that all medical societies will finally combine.

Pharmaceutical Preparations

A serious defect of our public health organization is its extreme tolerance in permitting the sale of medical preparations. Every two or three years we see an extraordinary advertising campaign promoting some wonderful remedy, generally vegetal, which cures all kinds of diseases, as shown by photographs, certificates and other testimonials that all newspapers publish without any scruples. These products are sold on a large scale to the great benefit of the owners. As a rule, when they are submitted to the technical bureaus of the national department of public health, these advise against their sale; but through political influence this decision is revoked and their sale is authorized. The same thing has happened many times. The last case of the sort, which occurred recently, was rather interesting, since the remedy can be sold in the federal capital, but its sale is forbidden in the province of Buenos Aires, where it was proved that it was just plain water. As soon as the sale of one of these products is authorized, the technical bureaus are asked to state only whether the product is harmful or not; as soon as they reply that it is not harmful, permission for sale is given. These practices have continued for many years to the great harm of the public health, and amount to a form of complicity on the part of the public health authorities with the exploiters.

BERLIN

(From Our Regular Correspondent)

Nov. 16, 1920.

Closing of the Friedmann Tuberculosis Institute

Shortly after Friedmann succeeded in inducing the minister of public instruction, Haenisch, to bestow on him the office of extraordinary professor with duties in connection with the treatment of tuberculosis, he exerted himself to the utmost to secure the establishment of a government-controlled institute for the treatment of his patients. After repeated attempts had met with failure, a portion of the old military hospital in Scharnhorst Street was fitted up for his purpose. Only the building was furnished him by the government. To secure the furnishings for the hospital and the funds needed for its maintenance, the minister of public instruction succeeded in interesting two of his friends, Parvus and Sklarz, in the enterprise. These two men, who, during the war, had amassed considerable fortunes through the filling of army contracts, agreed to contribute the sum of 700.000 marks for the support of the Friedmann Tuberculosis Institute. Haenisch accordingly announced in the Prussian assembly that with the aid of this generous gift a tuberculosis hospital for the common people was to be established, in which tuberculous patients without adequate means could enjoy the blessings of the "Friedmann treatment!" Just what course affairs took did not become publicly known until recently. Georg Sklarz and Friedmann eventually had a falling out, and much came to light during the recriminations that followed. The "Institute," founded ostensibly for the benefit of the poorer classes, apparently changed very quickly into a private institution from which the two partners, Friedmann and Sklarz, are said to have derived considerable revenue. From February to September, 1,350 patients were treated, and only fifty of these received free treatment! From the other patients fees were received ranging from 20 to 600 marks. To fifty patients, who apparently had more means than the rest, Friedmann is said to have

given special private treatment. Friedmann, however, seems to have kept within modest limits even as regards the higher fees charged private patients, for from those who called on him during his regular consultation hours he secured fees that gradually rose from 600 to 5,000 marks and more for the "treatment," which consisted, it is said, of a single injection. The falling out between Sklarz and Friedmann, according to Friedmann's statements, was the fact that Sklarz claimed, in addition to his share of the medical fees, special commissions for himself, and because of his demand that the price of the Friedmann remedy be increased from 15 to 20 marks. Sklarz, on the other hand, brings charges against Friedmann on account of his alleged cupidity and other misdemeanors. Sklarz has reduced his complaints to formal writing and has presented them to the Bureau of Public Instruction with the request that disciplinary action be taken against Friedmann. If his request is complied with, the minister of public instruction may be compelled to depose from office the man whom he appointed to a professorship—an appointment made against the judgment of the medical profession in general, and of the medical faculty of the university in particular. Friedmann, in turn, has induced the Staatsanwalt (Solicitor General) to take up the case and to inquire into Sklarz' demands.

In conclusion it is worth noting that the supposed tuberculosis institute for the common people—apparently a Friedmann-Sklarz private institute—has closed its doors.

Memorial Tablet in Honor of Zuntz

At the suggestion of the Niederrheinische Gesellschaft für Natur- und Heilkunde, a memorial tablet is to be placed on the birthplace in Bonn of the Berlin physiologist N. Zuntz, who died last spring. To the pupils and friends of Zuntz the society has issued an appeal for contributions for this purpose. As there are doubtless a large number of former pupils of this famous scientist among American colleagues, the announcement of the plan may not be out of place. Contributions may be sent to Prof. A. Loewy (Kurfürstenstrasse 43, Berlin), who for many years was a collaborator with Zuntz.

Prize Award for Work on Radiotherapy in Tuberculosis

The Robert Koch Foundation for Combating Tuberculosis announced last year a prize for the best work on the subject "The Value of the Various Kinds of Rays (Sun, Roentgen, Radium, Mesothorium) for the Diagnosis and Treatment of Tuberculosis." The prize of 5,000 marks has now been awarded to Dr. Gassul, a former assistant in the Berlin University Institute for the Investigation of Cancer. The judges were Bumm, president of the reichsgesundheitsamtes (public health bureau), Geheimrat Flügge, Professor Kayserling and Kirchner, formerly "ministerial director."

Marriages

James W. Chapman, Pasadena, to Miss Madge Dickinson of Shelbina, Mo., at San Gabriel, Calif., November 26 .

Charles R. Fox to Miss Helen M. Behringer, both of Northampton, Pa., at Mauch Chunk, Pa., recently.

Edna N. Sypher Kane to Fabyan Packard, both of Boston, at North Andover, Mass., September 12.

Louis Edward Sauriol, Wolfe Island, Ont., to Miss Ita M. La Marche of Kingston, Ont., November 15.

Octavius Thorndike Howe, Boston, to Mrs. Arthur L. Kelley of Providence, R. I., November 18.

Jacob J. Mendelsohn to Miss Grace Helen Kamerman, both of Chicago, August 15.

Robert G. Savage to Miss Edith Lavin, both of Oak Park, Ill., November 10.

Deaths

Francis James Kearny, Plaquemine, La.; Tulane University, New Orleans, 1886; aged 60; a member of the Louisiana State Medical Society; for thirty years local surgeon for the Texas and Pacific Railway Company; a member of the first state board of medical examiners in 1896; coroner and health officer of Iberville Parish from 1896 to 1900; at one time a member of the Plaquemine City Council; died suddenly, December 2, from angina pectoris.

Fontaine Bruce Moore ⊕ Memphis, Tenn.; University of Pennsylvania, Philadelphia, 1911; aged 34; lieutenant, M. C., U. S. Army, and discharged, Dec. 27, 1918; a specialist in diseases of the eye, ear, nose and throat; a member of the American Academy of Ophthalmology and Oto-Laryngology, and Memphis Society of Ophthalmology and Oto-Laryngology; died, November 27, from lobar pneumonia.

Frank Martin ⊕ Baltimore; University of Maryland, Baltimore, 1886; aged 57; major, M. C., U. S. Army, and discharged, June 23, 1919; professor of clinical and operative surgery in his alma mater; visiting surgeon to University of Maryland and other hospitals; a member of the Southern Surgical and Gynecological Association, and American College of Surgeons; died, December 7.

William Joseph Schuyler, Utica, N. Y.; University of the City of New York, 1885; aged 59; a member of the Medical Society of the State of New York, lecturer in obstetrics in the St. Luke's Hospital Training School for Nurses; visiting physician to the House of Good Shepherd; at one time health officer of Utica; died, November 20, from cerebral hemorrhage.

Moses D. Hoge, Jr., Richmond, Va.; University of Heidelberg, Germany, 1886; aged 59; a member of the Medical Society of Virginia; at one time professor of histology and pathology, clinical diagnosis, and biology in the University College of Medicine, Richmond; formerly a member of the board of health and city school board; died, November 24.

Fayette H. Montgomery ⊕ Danville, Ky.; George Washington University, Washington, D. C., 1892; aged 50; secretary of Boyle County Medical Society since 1917; health officer of Boyle County; who was under treatment at the Cincinnati Sanitarium, College Hill, was found dead, November 24, from knife wounds.

Edwin Scott Blair, San Bernardino, Calif.; University of Michigan, Homeopathic Medical School, 1903; aged 48; formerly superintendent of the Southern California State Hospital, Patton; was instantly killed, December 4, when the automobile in which he was riding was struck by a train.

Robert Arthur Bowie, Brockville, Ont.; McGill University, Montreal, 1891; L. R. C. P., and L. R. C. S., and London, 1892; aged 50; Lieutenant-Colonel, R. A. M. C.; was instantly killed, November 26, when he fell down an elevator shaft in St. Vincent de Paul Hospital, Brockville.

Albert P. Black, Bradner, Ohio; National Normal University, Lebanon, Ohio, 1896; aged 60; at one time mayor of Bradner, and president of the school board; died in St. Vincent's Hospital, Toledo, November 21, from cerebral hemorrhage.

Edwin Lee Morgan ⊕ Washington, D. C.; Medical College of Virginia, Richmond, 1879; aged 65; consulting physician of St. Ann's Orphan and Infant Asylum; librarian of the Medical Society of the District of Columbia; died, November 23.

Frank Virdin, Wilmington, Del.; College of Physicians and Surgeons, Baltimore, 1894; aged 54; a member of the Delaware State Medical Society; died in Johns Hopkins Hospital, Baltimore, November 27, from acute dilatation of the heart.

John Moore, Shannonville, Ont.; Queens University, Kingston, Ont., 1891; aged 64; died in the General Hospital, Belleville, Ont., November 12, from injuries received when an automobile in which he was riding was struck by a train.

Woodford Hinzman ⊕ Terra Alta, W. Va.; College of Physicians and Surgeons, Baltimore, 1903; aged 42; physician at the West Virginia Tuberculosis Sanatorium; died in that institution, November 22, from pulmonary tuberculosis.

Almedes Frank Feraco, Brooklyn; New York Homeopathic Medical College, New York City, 1918; aged 27; died at

⊕ Indicates "Fellow" of the American Medical Association.

the Southampton, L. I., Hospital, November 25, from gunshot wounds accidentally received while on a hunting trip.

Granville Reynard ✠ Union City, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 64; health officer of Randolph County; president of the Randolph County Medical Society in 1919; died, November 26, from cerebral hemorrhage.

John C. Ferbert ✠ Los Angeles; University of Southern California, Los Angeles, 1897; aged 48; assistant surgeon, lieutenant (j. g.), U. S. N. R. F., and discharged, March 27, 1919; died, December 3, from cerebral hemorrhage.

William Thomas Bishop ✠ Harrisburg, Pa.; Rush Medical College, 1879; aged 80; medical examiner of the Pennsylvania Railroad for twenty-five years; a veteran of the Civil War; died in Ebensburg, November 27.

Charles W. Drew, Minneapolis, Minn.; University of Vermont, Burlington, 1880; aged 62; founder and director of the Minnesota Institute of Pharmacy; at one time city physician and chemist; died, November 25.

James W. Pilcher, Stellaville, Ga.; Atlanta Medical College, 1875; aged 67; a practitioner for forty years; died at the home of his daughter in North Augusta, Ga., November 22, from cerebral hemorrhage.

Frank Joseph Plummer, Malden, Mass.; Baltimore Medical College, 1896; aged 64; a member of the Massachusetts Medical Society; died at the Peter Bent Brigham Hospital, recently, from nephritis.

William M. Calhoun, East Liverpool, Ohio; University of Wooster, Cleveland, 1877; aged 75; at one time vice president of the Columbiana County Medical Society; died, November 20, from pneumonia.

Alton Winslow Leighton, New Haven, Conn.; Yale University, New Haven, 1879; aged 52; a practitioner of New Haven for forty years; died in LaJolla, Calif., November 17, from heart disease.

William H. Baldwin ✠ Coldwater, Mich.; Detroit College of Medicine and Surgery, 1895; aged 54; at one time president of the Northern Tri-State Medical Association; was found dead, November 29.

Casey Sims, Morton, Ill.; Chicago College of Medicine and Surgery, 1914; aged 32; was instantly killed, December 1, when the automobile in which he was riding struck a ditch and overturned.

Abijah Benjamin Bennett, Opelika, Ala.; College of Physicians and Surgeons, Baltimore, 1881; aged 64; a member of the Medical Association of the State of Alabama; died, November 12.

Francis Augustus Schlitz ✠ Brooklyn; University of the City of New York, 1878; aged 74; at one time consulting physician to the Deaconess Hospital, Brooklyn; died, November 28.

Andrew B. Kirkpatrick, Philadelphia; Jefferson Medical College, 1884; aged 66; a member of the Medical Society of the State of Pennsylvania; died, November 22, from cerebral hemorrhage.

Theodore Clifton Cole ✠ Thurman, Iowa; College of Physicians and Surgeons, Keokuk, 1878; University Medical College of Kansas City, 1896; aged 66; died, October 16, from pneumonia.

Charles Austin Rood, Reedsburg, Wis.; Rush Medical College, 1876; aged 68; for thirty-five years resident physician of the Northwestern Railway; died, November 20, from nephritis.

Sylvanus L. S. Spragg, Wheeling, W. Va.; Jefferson Medical College, 1879; aged 68; a member of the West Virginia State Medical Association; died, November 21, from heart disease.

James Druery Boyce, Memphis, Tenn.; Vanderbilt University, Nashville, Tenn., 1875; aged 65; a practitioner for forty-five years; died, November 12, from cerebral hemorrhage.

Oliver R. Venable, Winchester, Ky.; University of Michigan, Ann Arbor, 1885; aged 60; a member of the Kentucky State Medical Association; died, December 3, from pneumonia.

John Smith Douglass ✠ Cape May C. H., N. J.; Medico-Chirurgical College of Philadelphia, 1896; aged 53; health officer of Cape May County; died in Philadelphia, December 6.

John Robert Thompson, Nashville, Tenn.; Vanderbilt University, Nashville, Tenn., 1883; aged 59; health officer of Davidson County; died, November 28, from heart disease.

Thomas Jefferson Pitner ✠ Jacksonville, Ill.; College of Physicians and Surgeons in the City of New York, 1869; aged 78; a practitioner for fifty years; died, December 3.

Frank D. Emack, Phoenixville, Pa.; University of Maryland, Baltimore, 1875; aged 70; a member of the Medical Society of the State of Pennsylvania; died, November 21.

John William Coughlin, Fall River, Mass.; College of Physicians and Surgeons, Baltimore, 1885; aged 60; mayor of Fall River from 1891 to 1895; died, December 1.

John McClusky Murray, Wind Ridge, Pa.; Bellevue Hospital Medical College, 1876; aged 74; a veteran of the Civil War; died, November 26, from heart disease.

Johannes Alfred Elmere, Osage City, Kan.; Kansas Medical College, Topeka, 1894; aged 54; died in the Swedish Hospital, Kansas City, November 18, from carcinoma.

Bernard S. Peck, Galva, Ill.; Jefferson Medical College, 1872; aged 75; one of the founders of the Galva State Bank; died, November 21, from cerebral hemorrhage.

Theodore Arthur Weed, Cleveland and West Park, Ohio; University of Wooster, Medical Department, 1877; aged 64; died, November 28, from heart disease.

Grant Marchant, Milledgeville, Ohio; Columbus Medical College, 1887; University of the City of New York, 1891; aged 55; died, about November 29.

Benjamin R. Woodyard, Little Rock, Ark.; Memphis, Tenn., Hospital Medical College, 1894; aged 51; was shot and killed at his home, November 30.

George W. Simmons, Denton, Md.; Pulte Medical College, Cincinnati, 1888; aged 76; died at the home of his son in Chestertown, Md., November 20.

Samuel Augustus Brecht, Quentin, Pa.; University of the City of New York, 1884; aged 61; died, November 26, from abscess of the liver.

Nicholas Thomas Bolen, Brooklyn (License, New York); aged 59; chief dermatologist of the Wykoff Heights Hospital; died, November 28.

Peter John Conroy ✠ Everett, Mass.; University of Vermont, Burlington, 1882; aged 65; died at Randolph, N. H., about November 28.

William Henry Lippert, Philadelphia; University of Pennsylvania, Philadelphia, 1899; died, suddenly, October 10, from heart disease.

Godfred L. Miller, Winchester, Va.; Winchester (Va.) Medical College, 1859; aged 82; a veteran of the Civil War; died, December 2.

John Beale Gardner, Washington, D. C.; Medical College of Virginia, Richmond, 1852; aged 90; died, November 18, from pneumonia.

Randolph Foster Bryant, Chicago; Eclectic Medical Institute, Cincinnati, 1869; aged 72; died, November 11, from arteriosclerosis.

J. DeWitt George, Indianapolis; Homeopathic Hospital College, Cleveland, 1880; aged 66; died, December 1, from heart disease.

Francis McCabe, Palmyra, Mo.; University of Pennsylvania, Philadelphia, 1855; aged 91; died, November 15, from nephritis.

James A. P. Knox, Memphis, Tenn.; St. Louis Medical College, 1859; aged 89; a retired practitioner; died, December 1.

Frank Clair Kennelley ✠ Denver; University of Illinois, Chicago; aged 37; died, December 5, from influenzal pneumonia.

Philip Seidman, New York City; University and Bellevue Hospital Medical College, 1920; aged 23; died, November 30.

Frank Warren, Whitby, Ont.; McGill University, Montreal, Que., 1872; aged 70; died, November 9, from heart disease.

Mary Cornelia Heileson-Nelson, Elk Horn, Iowa; University of Michigan, Ann Arbor, 1896; aged 61, died recently.

A. Pierre Sillan, St. Martinville, La.; Tulane University, New Orleans, 1894; aged 54; died, November 22.

James I. Gumaer, Beatrice, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1876; died, recently.

Cicero Buchanan, Waynesboro, Tenn.; Atlanta, Ga., Medical College, 1868; aged 78; died, November 28.

Frank G. Legg, Coldwater, Mich.; Chicago Homeopathic Medical College, 1879; died, December 1.

John Grant, Woodville, Ont.; University of Toronto, Ont., 1888; aged 58; died, November 2.

The Propaganda for Reform

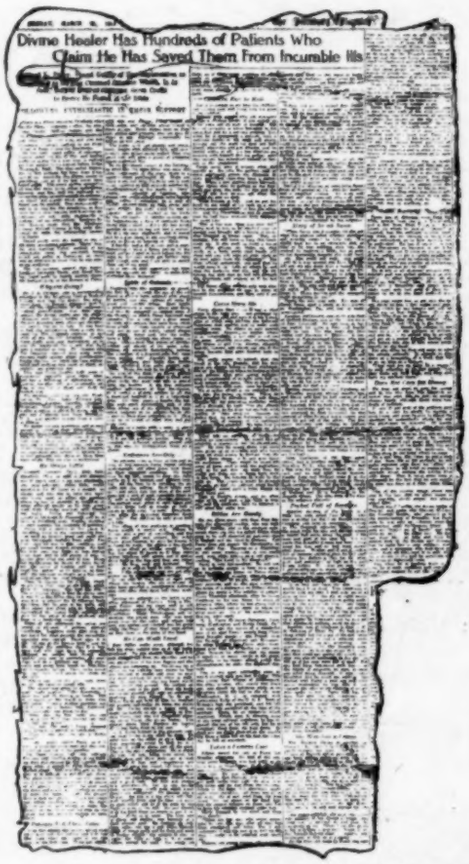
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE PARRY MEDICINE COMPANY

A Pittsburgh Quackery Is Debarred from the Mails

For some years Pittsburgh, Pa., has harbored a quack concern known as the Parry Medicine Company. The president of the company was one Leonard L. Parry, who advertised himself as "Dad Parry, the Healer" and also as "The Miracle Man." Parry was the principal owner of the company, but its secretary and treasurer, one W. F. Craig, was also a stockholder. The Propaganda files contain a page from the Pittsburgh *Dispatch* of Sunday, March 29, 1914 (which we reproduce in miniature), containing a sensational write-up of the usual Sunday newspaper "feature" type of Leonard L. Parry, the "Divine Healer." The article occupied two-thirds of a page. Four weeks later, the same paper contained in its Sunday edition a full page advertisement (also reproduced) of the Parry quackery. Whether the advertisement was in the nature of a *quid pro quo* for the "special article" we have no means of knowing. The matter is referred to simply because printers' ink is the life blood of quackery.

Parry, who is an obviously ignorant faker, brags that he has been arrested 21 times and imprisoned 9 times. In April, 1917, he was arrested and convicted of the illegal practice of medicine and was sentenced on three indictments to pay a fine of $500 and to serve six months in jail. Newspaper reports indicate that Parry, by legal technicalities, kept out of jail until December, 1917. It seems, also, that an effort was made to appeal to the Governor of Pennsylvania for a special permit entitling Parry to practice medicine without violating the Medical Practice Act. Later the State Pardon Board was petitioned and strong efforts were made to obtain a pardon for Parry. Fortunately, these efforts were unsuccessful.


Divine Healer Has Hundreds of Patients Who Claim He Has Saved Them From Incurable Ills

Greatly reduced reproduction of a "feature article" in the Sunday edition of the Pittsburgh *Dispatch*, March 29, 1914. It recounts the marvellous exploits of Parry the "Divine Healer."

THE FEDERAL GOVERNMENT REACHES PARRY

Apparently, as soon as Parry got out of jail he went right back to his quacking and in time the federal authorities took action. As a result, the Parry Medicine Co. has been denied the use of the mails because it has been found guilty of conducting a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises. The order was issued Oct. 14, 1920. The memorandum of Judge W. H. Lamar, Solicitor for the Post Office Department to the Postmaster-General recommending the issuance of a fraud order brings out various interesting points and we quote extensively from this memorandum:

"The Parry Medicine Company was incorporated under the laws of Ohio in June, 1919, with a capitalization of $10,000. The company is principally owned by L. L. Parry, the next largest stockholder being W. F. Craig. The gross revenue up to August 3, 1920, was $290,193.31. The company was organized to handle the medicines originated by L. L. Parry, self-styled 'Dad Parry the Healer' and the 'Miracle Man.'"

The "medicines" put out by the Parry concern were fourteen in number and were numbered consecutively. They were essentially the same in composition, differing only in flavoring. They were all sold at the uniform price of $1.50 for each 6⅔ ounce bottle. The government chemists reported that each of the "fourteen separate and distinct Parry medicines" contained one-fourth alcohol (25 per cent.), one-fourth water, one-half olive oil and from one to four drops of certain vegetable oils. Here is the list of medicines and the diseases for which they were sold, together with the composition as found by the federal chemists:

PARRY'S FOURTEEN REMEDIES

"No. 1.—For Tuberculosis, Lungs, Bones or Flesh, Gallstones or Tapeworm."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil, about 50 per cent., and a few drops of the oils of anise, clove, sandal and juniper.

"No. 2.—For Cancer, Tumors, Adenoids, Hemmorrhoides, Piles, Asthma, Goiter, Typhoid and all other fevers."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of spearmint and clove.

"No. 3.—For Bright's Disease, Bladder, Kidneys, Influenza and for Weak Women."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of sandalwood and juniper.

"No. 4.—For Stomach, Bowel Trouble, Black Plague and Leprosy."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of clove, cinnamon and peppermint.

"No. 5.—For Inflammation of Throat and Bronchitis."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of clove, juniper and cinnamon.

"No. 6.—For Eczema, Pimples, Skin Disease and Smallpox."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of spikenard, clove and anise.

"No. 7.—For Varicose Veins, High Blood Pressure and Dropsy."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of the oils of sandalwood and spikenard.

"No. 8.—For Diabetes, Liver, Spleen and Adenoids."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil, about 50 per cent., and a few drops of oils of sandalwood and spikenard.

"No. 9.—For Insanity, Fits, Paralysis, Meningitis, Mad Dog and Snake Bite."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oil of spikenard.

"No. 10.—For Heart, Kidneys, Nose and Throat."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of spikenard and juniper.

"No. 11.—For Nervous Troubles, Rheumatism and Saint Vitus Dance."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of cinnamon, clove and lemon.

"No. 12.—For Nerves, Gall Stones, Curvature of Spine and Deformity."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of clove, anise and lemon.

"No. 13.—For Blindness, Weak Eyes, Cataract and Deafness."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oils of cinnamon, anise and clove.

"No. 14.—All Venereal Diseases, Etc."

Contained alcohol about 25 per cent., water about 25 per cent., olive oil about 50 per cent., and a few drops of oil of juniper.

A MEDICINE WITH A "KICK"

As has been said, each bottle contained 6⅔ ounces of which one-fourth was alcohol. A dose was the *contents of one bottle!* Obviously, a person taking a dose of the Parry medicines would get 1⅔ ounces of alcohol, or the equivalent of 3⅓ ounces of whisky at 100 per cent. proof. It is easily conceivable that such a dose—equal to two stiff highballs—would change the outlook of the taker and possibly cause him to view Parry's quackery in a somewhat tolerant light. This fact also lends color to the report of a woman witness against Parry in a case in 1916 when this quack was charged with practicing medicine without a license. The woman testified at that time, according to the newspapers, that when she visited the Parry headquarters she was given a "dose" of the Parry medicine which "had a slight taste of gin" and affected her so that she "felt drunk." She testified, also, that in the rear room she saw nurses administering to many women "who were sprawled out apparently drunk or affected in some way by the stuff."

Opened Eyes of Blind Man Who Could Not See for Eight Years
Amazing Recoveries Among Many Patients of Leonard L. Parry
Paralyzed Woman in Invalid's Chair Seven Years Now Walking
Witnesses Shed Tears When Grateful Patients Thank Their Benefactor
COUPON

Greatly reduced reproduction of a full-page advertisement of Parry's quackery in the Sunday edition of the Pittsburgh *Dispatch*, April 26, 1914 — four weeks after the "write-up."

To get back to Judge Lamar's memorandum:

"In describing how he 'discovered' his medicines, Parry testified that some ten or twelve years ago, on account of the failure of his general health and eyesight, he had to give up the house-moving and general contracting business, in which he was engaged, and purchased a small coal yard, and that later his failing sight necessitated the abandonment of this business; that he remained at home, unable to work on account of his total blindness, for about a year, and that during this time God instructed him how to compound his various medicines. He stated that all of the information did not come to him at once, and his testimony is somewhat vague on the point as to whether he gleaned his information from his reading of the Bible during the year when, according to his statement, he was 'totally blind', or whether he obtained all of his information by means of 'visions.' When asked on cross-examination on what particular passage of Scripture his theory of medication was based, Parry answered by giving an alleged quotation from the Bible as follows: 'Go, preach my Gospel through all the world, without money and without price.'"

CURING CANCER OF THE LIVER

The memorandum goes on to state, further, that as a matter of fact Parry failed to give either God or the Bible any credit for his "wonderful discoveries" but took full credit to himself. Then:

"Parry testified that by means of this medicine he cured himself of total blindness, heart trouble, stomach trouble, obesity, and cancer of the stomach and liver, although he admits that while he is only 5 feet, 10½ inches tall, he now weighs 251 pounds. He says his medicine will grow hair, but he, himself, is slightly bald. With reference to his alleged cure of cancer of the liver in himself he said:

PARRY.—I had a cancer on the liver and I vomited it up and took it out. I couldn't get it out and I had to take it out with my hand and I throwed it in a bucket and dumped it in the snow, and the stuff I vomited up after that was bitter. I vomited up that great big fat cancer and throwed it in the bucket.

QUESTION.—Could you state for the information of the Court just how your medicine works on cancer?

PARRY.—It works different ways. There are 54 different kinds of cancer. I've had hundreds of cases where they just take the medicine and it comes out on the floor. Fibroid cancers is awful. I never see one yet that it [the medicine] wouldn't get in three minutes.

"On cross-examination he was unable to explain how a big fat cancer,' so large that he could not get it out of his mouth without clawing at it with his fingers, could pass from his liver to his stomach and thence up through his mouth.

"Parry stated that he is not a doctor and that he 'wouldn't be a doctor for anything in the world,' that he does not diagnose cases, but relies entirely on the statements of his patients as to what is the matter with them. He asserted on the witness stand that this medicine will cure every disease to which humanity is heir, but admitted that it will not restore life to the dead. His claims for the medicine are based on statements of persons who have taken it. He failed to produce at the hearing before this office proof of a single cure effected by his medicine in any disease, the presence of which had been clearly established after proper diagnosis.

"In response to a test letter sent to the company by the inspector under the name Ellen Stone, in which the writer alleged that she had cancer of the breast, the Parry Medicine Company replied in part as follows:

Your health can be returned, there is no reason why it cannot, thousands and thousands have been returned to health with the same trouble. . . . Mr. Parry's medicine No. 2 has cured over 14,000 cancers, many of which were identically the same as yours. Bad blood is the real cause of all disease, sickness, suffering and pain. Mankind came from blood and blood the body is. From infancy to the grave we have to keep our blood pure.

"It is not clear how Craig, who is not a physician, the writer of the letter from the Parry Medicine Company above referred to, was able to state, without ever having seen the patient, that the disease from which Ellen Stone thought she was suffering was 'identically the same' as that from which many of the 14,000 persons, alleged to have been cured by Medicine No. 2, were suffering."

The Government, in preparing its case, sent certain test letters to Parry and these letters with their answers became part of the court records. With reference to one of these letters the memorandum says:

"In response to a test letter sent by the Inspector under the name John Gillis, in which it was stated that the writer was suffering from blindness, a letter was received from the Parry Medicine Company signed 'Mr. Craig,' reading in part as follows:

Our medicine No. 13 will do the work, I presume you would think it ridiculous and absurd were I to tell you that medicine has not only restored sight to the blind, and returned health to the afflicted eyes of others, but persons having taken the medicine for some time have actually grown new eyes in their heads where they had run out.

This may seem absurd Mr. Gillis, but it is an absolute fact in several cases. This same truth and records I personally furnished to

the United State Government, we stand ready today also to produce these people and let them speak for themselves.

"Parry testified on this point as follows:

Question.—How does the medicine grow an eye that a surgeon has taken out?

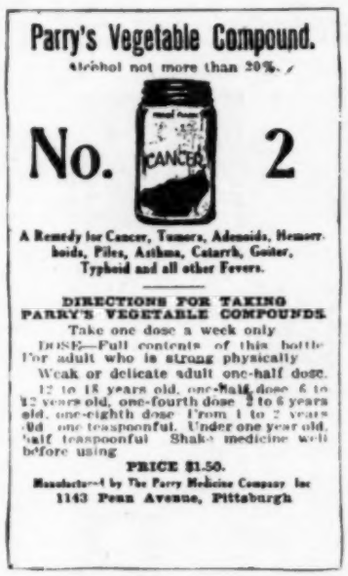
Parry.—Why, when you were born into the world, you had two eyes, didn't you? Well, your mother gave you your eyes with her blood, didn't she? Now I don't see why your blood wouldn't make another eye if it was good.

Question.—So you grow an eye by means of what's in the blood?

Parry.—Yes, you see it couldn't be done any other way. There's only two ways of making an eye, one's with glass and the other through the blood. You see we're all equal in this world, your body is no better than mine and mine's no better than yours, because there's nothing in either that hasn't been made with blood.

PARRY'S "EXPERT"

Like most medical mail-order fakers the Parry Medicine Company hired a man who had the legal right to put "M.D." after his name. According to Judge Lamar's memorandum, the man in this case was one George B. Kline, who acted as Parry's "expert" and who admitted on the stand he had been employed by Parry for seventy-five weeks during 1916 and 1917. He further testified that he assisted in dispensing the Parry medicines and that, although he did not know what the medicines contained, he had prescribed them to about two thousand persons each week during that time.


Parry's Vegetable Compound.
Alcohol not more than 20%.
No.
CANCER
2
A Remedy for Cancer, Tumors, Adenoids, Hemorrhoids, Piles, Asthma, Catarrh, Goiter, Typhoid and all other Fevers.
DIRECTIONS FOR TAKING PARRY'S VEGETABLE COMPOUNDS.
Take one dose a week only
DOSE—Full contents of this bottle
For adult who is strong physically
Weak or delicate adult one-half dose.
12 to 18 years old, one-half dose 6 to 12 years old, one-fourth dose 2 to 6 years old, one-eighth dose From 1 to 2 years old one teaspoonful. Under one year old, half teaspoonful Shake medicine well before using
PRICE $1.50.
Manufactured by The Parry Medicine Company Inc
1143 Penn Avenue, Pittsburgh

Reproduction (reduced) of a label from one of Parry's cocktails.

In addition to selling his medicines, Parry also sold a book entitled "The Cause of Disease" of which he was alleged to be the author. The book sold for $3.00 and was represented as being "Worth its weight in gold." It contained 278 pages, 10 of which were devoted to "the cause of disease as expounded by L. L. Parry" and the balance largely to testimonials for the Parry medicines. At the time the fraud order was issued Parry, according to the postmaster at Pittsburgh, was receiving from thirty-five to fifty pieces of mail a day.

Correspondence

"STRONGYLOIDES INTESTINALIS INFESTATION"

To the Editor:—The report of a case of *Strongyloides intestinalis* infestation (THE JOURNAL, Oct. 23, 1920, p. 1137) should not be allowed to pass without comment, as it would leave the inexperienced in tropical diseases under the impression that the relatively harmless *Strongyloides stercoralis* is a formidable, death dealing foe of mankind, capable of determining in its host the most diverse and serious lesions imaginable. Here in the tropics, where intestinal parasites play such an important pathogenic rôle, we examine the stools of virtually every patient that comes to us, and in the course of these microscopic examinations we are constantly meeting *Strongyloides intestinalis*. The patients only rarely show symptoms that could even remotely be ascribed to infestation with this worm. The parasites themselves are extremely difficult to eradicate, and the hosts usually harbor them for years without any apparent detriment to their health. The fact that Dr. Ginsburg discovered larvae of *Strongyloides intestinalis* in the feces of a patient with jaundice, scaphoid abdomen, enlarged liver, edema of the extremities, tardy reflexes, subnormal temperature, rapid pulse and respiration, foul, reddish, very turbid urine containing albumin and hyaline and granular casts, and dying evidently of pulmonary edema, is no reason why *Strongyloides intestinalis* should be incriminated. With these very definite signs of a serious renal lesion and general toxemia, it might have been more profitable to center the attention on the organs involved, disregarding for the time being the innocent *Strongyloides*. In the presence of such organic lesions as evidently existed in the case reported, the administration of a powerful and toxic drug, such as thymol, would hardly be indicated.

The pathogenicity of *Strongyloides stercoralis* is still considered a debatable question. Castellani and Chalmers, in their "Manual of Tropical Medicine," state that "the parasite is generally believed to cause a catarrh of the small intestine, though many believe it to be nonpathogenic." Brumpt, in his "Précis de parasitologie," expresses himself thus: "For several years this parasite was considered as the causal agent of Cochin China diarrhea, but its absence in some cases of this disease have deprived it of its supposed rôle in the pathogenicity of this malady." Fantham, Stephens and Theobald, in their treatise on "Animal Parasites of Man," state that "The pathological significance of this intestinal parasite is not yet fully demonstrated"; and in Sir Patrick Manson's "Tropical Diseases" we read: "*Strongyloides intestinalis* was discovered by Normand in 1876. For a time it was supposed to be a cause of a form of chronic diarrhea very prevalent in Cochin China. Later investigations, while clearing up the natural history of the parasite have robbed it of any claim to pathological importance."

E. P. DE BELLARD, M.D., Caracas, Venezuela.

JOHN ROBINSON, M.D., OF NORWICH, ENGLAND, AUTHOR OF "ENDOXA," ETC., A SON OF THE PILGRIM PASTOR

To the Editor:—In connection with the Mayflower tercentennial, some of the readers of THE JOURNAL may be interested in the following clipping from the editorial page of the *Christian Life and Unitarian Herald*, Sept. 4, 1920, since this London weekly is comparatively inaccessible in America, and the passage in question shows for the first time that John Robinson, M.D., of Norwich, England, author of "Endoxa" and other works, fellow-citizen of Sir Thomas Browne at Norwich and probably his fellow-collegian at Leyden, was also a son of the famous John Robinson, pastor of the Pilgrims. Admirers of the immortal Sir Thomas may recall our John's quaint title: "Endoxa, seu quaestionum quarundam miscellanearum examen probabile . . . una cum Pseudodoxiae Epidemicae (T. Brunii) ventilatione tranquilla" (London, 1656), translated as: "Endoxa, or some possible inquiries into Truth, both divine and humane . . . as also a calm ventilation of Pseudodoxia Epidemica (or Doctrine of Vulgar Errours, set forth . . . by Thomas Browne) . . . Translated and augmented by the Author" (London, 1658).

Some nine years ago the announcement of the identification of John Robinson and his wife as from Sturton-le-Steeple was made for the first time through these columns. Now, on the eve of the three hundredth anniversary of the sailing of the *Mayflower*, we are able to point for the first time to John Robinson's son as having been settled in practice as a Doctor of Medicine in Norwich. By the diligent search of Dr. A. Eekhof, of Leyden, the will of Bridget Robinson, drawn up 28 October, 1643, has come to light. It describes her in terms which incidentally confirm our identification of her as the daughter of Alexander White, of Sturton—"de eerbare Brechgan Alexandersdr., wedue van zaliger D. Johannes Robbens, in sijn leven predicant in de Engelsche gemeente binnen deser stede"—the honourable Bridget, Alexander's daughter, widow of the late Master John Robinson, in his lifetime preacher in the English congregation within this city. But the interesting point is that she makes a bequest to the children, John and Mary, of her son "John Robinson, Doctor of Medicine, dwelling in England."

This gives an entirely fresh clue to the family. It led us to suggest that the John Robinson, M.D., of Norwich, whose medical thesis "De Purgatione" was published at Leyden in 1628, and who wrote some friendly criticisms of Sir Thomas Browne's Pseudodoxia Epidemica, or treatise on Vulgar Errors, in 1656, was one and the same with the son of the Pilgrim Pastor.

Rev. Alexander Gordon has now looked into the copy of Dr. John Robinson's "Endoxa" at the British Museum Library, with the result for us that this identification is established without a doubt. The opening section of this work consists of a Latin expansion of a "Consideration of certain Miscellaneous Propositions," "by John Robinson, Doctor in Physick, in Norwich, 1649." The writer here shows his judgment in regard to the nature of a Christian Church to be the same as that of the Pilgrim Pastor. He argues for the Independent position. He thinks it more than probable "that a company of Faithful (*the Heart no Man knoweth*) uniting themselves into a body, become a true Ministeriall Church; and having Christ for their sole head, may claime priviledge, to all the Ordinances instituted in the Gospell, as by a Charter belonging to them; without any necessary dependency, upon any power, either Secular or Ecclesiasticall."

Further than this, Mr. Gordon notes that the leaf prefixed to the "Endoxa," introducing it to the public, is signed by William Greenhill and Thomas Allen, two stalwart Independents. The latter was a Norwich man who fled to New England in 1638, and after his return was called to the pastorate of the Congregational Church in his native city. These two sponsors of the book commend it to the candid reader as "a Botanic Garden, free from weeds, variegated with the choicest plants and flowers of every kind, stocked and filled by the labour and industry of a man truly learned—a genuine son of the well known excellent and blessed Robinson." There can be no question that they point here to the famous John Robinson, of Leyden, in whose steps his son was closely walking.

This identification of Dr. John Robinson as the son of the Pilgrim Pastor may help to clear up an obscure point in the career of Sir Thomas Browne, the author of "Religio Medici," for the two men appear to have been not only fellow-citizens, but fellow-collegians at Leyden, and they were evidently on friendly terms. . . W. H. B.

LEONARD L. MACKALL, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

VALUE OF POSITIVE WASSERMANN REACTION IN ABSENCE OF CLINICAL SYMPTOMS

To the Editor:—Please state the relative value of a positive Wassermann reaction in the absence of all clinical history and symptoms of syphilis. Is a positive diagnosis of syphilis ever warranted under such circumstances?

A. F.

ANSWER.—A reliable frankly positive Wassermann reaction is evidence of syphilis. There are a few rare conditions other than syphilis which occasionally produce a positive Wassermann reaction, but these are so unusual that they constitute an unimportant exception to the general statement. Many Wassermann tests are made which are unreliable; and, in the absence of clinical evidence of syphilis, one should use great caution in making a diagnosis on a positive Wassermann reaction alone. It should be repeated more than once, and it should be made by a serologist whose findings can be depended on. It should also be frankly positive and not a borderline reaction.

CARING FOR RUBBER GLOVES

To the Editor:—Will you kindly print in your correspondence column a simple but efficient manner of caring for rubber gloves—a means that is feasible for the general practitioner. Please omit name.

W. E. M.

ANSWER.—The personal preference of the surgeon usually determines whether the dry or wet method is used for sterilizing rubber gloves. Dry sterilization is usually preferred because the hands do not become sodden as when gloves are wet. The interior of the glove is well dusted with talc powder, and a piece of gauze is introduced to keep the surfaces apart. The wrist end of the glove is folded over so that it can be put on without touching the outer surface. The gloves are then put into a cotton bag for sterilizing by dry heat or steam under pressure. If the wet method is to be used, the gloves are washed with soap and water containing a little ammonia, rinsed in sterile water and boiled for thirty minutes in a 1 per cent. solution of sodium carbonate. Then the gloves are dried and wrapped in a sterile towel and kept until needed. After the gloves have been sterilized by either method, they are kept in the sterile bags or towels until called for. If too long a time elapses, it is advisable to resterilize them to make sure that they are sterile.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 11. Sec., Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, Jan. 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, Jan. 11-13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.

HAWAII: Honolulu, Jan. 10-13. Sec., Dr. J. E. Strade, 1041 Alakea St., Honolulu.

INDIANA: Indianapolis, Jan. 11. Sec., Dr. W. T. Gott, Crawfordsville.

MINNESOTA: Minneapolis, Jan. 4-6. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.

MISSOURI: St. Louis, Jan. 18-20. Sec., Dr. George H. Jones, Jefferson City.

NEW MEXICO: Santa Fe, Jan. 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: New York City, Albany, Syracuse and Buffalo, Jan. 24-27. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 4. Sec., Dr. George M. Williamson, Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 11-12. Sec., J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 4-6. Sec., Dr. Urling C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 11-15. Sec., Dr. Thomas E. Finnegan, Harrisburg.

RHODE ISLAND: Providence, Jan. 6-7. Sec., Byron U. Richards, Providence.

SOUTH DAKOTA: Pierre, Jan. 18. Director, Division of Medical Licensure, Dr. H. R. Kenaston, Bonesteel.

WASHINGTON: Spokane, Jan. 4-6. Sec., Dr. William M. O'Shea, Spokane.

WEST VIRGINIA: Charleston, Jan. 13. Sec., R. T. Davis, Charleston.

WISCONSIN: Madison, Jan. 11-13. Sec., Dr. John M. Dodd, Ashland.

WHO'S WHO IN THE HOSPITAL?

An Attempt at Constructive Criticism

H. G. WETHERILL, M.D.
DENVER

None of the schemes for what is now designated by the term "hospital standardization" appear to me to contemplate the consideration of that which is fundamental and basic in the correction of the worst feature of hospital maladministration.

All attempts to standardize hospitals and to establish in them scientific procedure, orderly methods and coordinated endeavor for the attainment of better results must depend primarily on the measure of success each hospital has in organizing and amalgamating the *whole* working force of the institution.

In a "closed hospital"[1] with a relatively small and carefully chosen staff of well trained and efficient medical men, such organization and standardization are easy of attainment and are to be expected as a natural consequence of the favorable factors presented. Careful case recording, laboratory facilities, necropsy study and coordinated diagnostic, therapeutic and research methods should prevail.

Unfortunately, however, there are comparatively few such hospitals in America, and of the "open hospitals" only a relatively small number are so conducted as to be controlled or dominated by a group of highly trained and scientific men, even when such are available on the staff of the hospital.

The prevailing type of American hospital is the unendowed commercial "open hospital" into which any and every "reputable" physician is free to bring his patients for such treat-

1. The term "closed hospital" is here used in contradistinction to the term "open hospital" in deference to the accepted meaning of these terms as established by usage. They are both objectionable and convey erroneous impressions and, like the term "general hospital," are construed to mean that which they were never intended to mean. When hospital standardization ideals are realized, if they ever are, all hospitals will be "open hospitals" for those who apply and can qualify for practice in them, and there will be no "closed hospitals."

ment or operation as he may be pleased to direct and execute. How "open" such hospitals are, and how unrestricted the operations of the "reputable practitioners," we all know. In the vernacular of the race track it could be described as a "free-for-all, go-as-you please," competition in which the "brilliant performer of unnecessary operations" is likely to be the winner. Even osteopaths, chiropractors and advertising quacks sometimes have the entrée to such "open hospitals," and abortionists may use them to clear away the débris retained after an incomplete office operation.

Thus, under the protection and implied guarantee of safety the hospital holds out to its patients, the unattached and irresponsible "reputable" practitioner finds in its open door an invitation to attempt those things for which he has had little or no special training and for the safe conduct of which he is totally unfitted. He has none of the benefits of staff membership, if there be any, and he is free from all restraint and is responsible to no one for his conduct or his results. Case recording, laboratory facilities and coordinated diagnosis, therapeusis and research may never mean anything to him, and no refinements of hospital standardization can be brought to bear on him so long as he remains outside the hospital organization and is totally irresponsible to it and uncontrolled by it.

It is absolutely essential as a fundamental basis for progress along the lines of better hospital organization, which may some day lead to standardization, first to control and govern this disassociated, irresponsible and unorganized element in the existing hospital system.

What good could come of it if every hospital in the land were to be given in a night all the facilities prescribed by the most rigid requirements of the most highly idealized standardization program extant if its execution and operation depended on such an unassimilable and untrained personnel?

Candor compels us to admit that it is going to be next to impossible satisfactorily to standardize our hospitals along the simplest lines if the staff alone of each hospital is to be considered. It will require years of work to inculcate and implant the principles of hospital standardization into the minds and methods of those already within the hospital organizations, though they probably represent the better and most advanced element in the medical profession. To do this for those outside the hospital organizations, those on whom no influence or control can be directly exercised, would appear to be quite impossible.

If, then, we must reach and bring within the sphere of influence of the organized and standardized hospitals this detached and irresponsible element, and I believe all who consider this intricate problem will concede that this must be done, for they cannot be ignored or left without the organization, how should it be accomplished?

HOW TO REACH UNATTACHED, OUTSIDE PRACTITIONERS

In many instances, in every large city where there are "open hospitals," some of the most capable and able physicians and surgeons in the community practice extensively in some hospital with which they have no official connection or tie of any kind. They would in many, indeed in most of such instances, welcome any plan that would include them in the scheme of official association with such hospital. That such recognition has not been accorded them in the past is due to the crucial failure of the system, or lack of system, on which most American hospitals have been founded; for it should always have been a fundamental principle of organization and control in all hospitals that no physician be allowed to practice in them till he had formally been accorded the privilege.

Furthermore, his application for admission as an "approved," "associate" or "visiting physician" should have been accompanied by a detailed statement of his personal history and educational advantages, his special training and professional associations, and other personal data that would be pertinent.

His application should have been passed upon by a committee of officials of the hospital on which the medical staff should have adequate representation, and if his application is favorably acted upon he should be granted a *revocable permit* to practice in the hospital.

Late as it is, formidable as the obstacles seem to be and are, this is the plan that in my opinion should now be universally adopted to create a foundation for satisfactory individual hospital organizations and universal hospital standardization.

Some such plan as this for reaching and bringing within the sphere of influence of this standardization movement these detached but essential elements will have to be adopted, or a considerable and important part of the working hospital personnel can never be reached or influenced in any way.

BASIC FACTORS IN STANDARDIZATION OF HOSPITALS

It has been said many times that the standardization of hospitals and the standardization of physicians and surgeons must go hand in hand, and that the advancement of one of these necessarily implies the progress of the other; but this can be true only if their interdependence is closely tied together and if consistent effort is made to bring within the fold all surgeons and all hospitals that present evidence of qualifications that should entitle them to recognition.

Once established, such a system would soon create for those hospitals and those surgeons who conformed to its requirements a prestige that would compel the compliance of all the others. The history of the reorganization of medical education in America would be repeated, and the standardization of American hospitals would then be a readily solvable problem.

In 1918, I presented a resolution at the annual meeting of the staff of two of the Denver hospitals with which I have long been connected, in which it was set forth that it was the sense of the staff that no one should be permitted to practice in the hospital till he had made formal application for the privilege of doing so and his application had been favorably passed upon by the proper board or committee of the hospital.

I subsequently prepared and submitted a form of application blank as a basis of operations, but in neither hospital was any effective action taken, though the resolution was unanimously voted by the staff at its annual meeting (the only meeting of the staff for the year, by the way, in each instance). A copy of the application form is given herewith as a guide to the preparation of such forms for other hospitals.

It is a pertinent commentary on this state of things that within the last year in each of these hospitals serious consequences, and in one instance a fatal result, followed the grossest and most inexcusable malpractice at the hands of "outside operators" who had been permitted to use the operating room without the knowledge or consent of any physician or surgeon connected with either hospital. How many other such instances there may have been during those two years since the staff "solemnly" and unanimously resolved that such things should not be, I do not know. The foregoing details are given solely because I believe that such conditions are not peculiar to Denver but are common elsewhere; indeed, one might almost say everywhere throughout the United States.

Staff meetings once in each year and the lack of coordination this implies within the hospital organization, and the "open door" for "outside operators" must be considered as primary basic defects in any scheme of hospital standardization. Nothing, nothing whatever, can be done to standardize

anything on earth till such fundamental fallacies are eliminated.

Again using my own city as an example, merely because it probably is typical of many others, it is significant that the one hospital in which monthly meetings of the staff are held and in which some approach to the established standards of the American College of Surgeons is attained is the only closed hospital in the city, that is, its patients are all under the care of members of its staff. This is the more remarkable as it is the one hospital in which all citizens of Denver may be said to have a proprietary right and in which chiropractors and other quacks might without impropriety set up a claim for equal privileges with others.

Date.....192

APPLICATION FOR PERMISSION TO PRACTICE IN ..... HOSPITAL AS AN "APPROVED ASSOCIATE PHYSICIAN"

Name in full.....

Residence .....

Office .....

Date of your license to practice in Colorado?.....

In what states other than Colorado have you practiced and between what dates?.....

.....

Date and place of birth.....

When and where were you graduated in medicine?.....

.....

Other degrees taken.....

Hospital, college and other appointments, internships, etc.....

.....

.....

.....

Specialty .....

Postgraduate courses .....

.....

Associated with or assistant to.....

.....

How long? (Give dates).....

Past clinical laboratory and surgical opportunities.....

.....

.....

In accepting the privileges and facilities of Hospital for my patients, to be treated or operated on by me, I agree to be bound and governed by all the rules and regulations of the hospital and all regulations made for the government of its medical and surgical staff.

I shall accept the appointment as an approved associate physician or surgeon of the hospital if it is offered me, subject to revocation and cancellation on ten days' notice if for any reason at any time the executive board of the hospital deems it desirable or necessary to revoke and cancel this permission to practice in the hospital.

Approved:.....192

....

....
Committee.

This application must be accompanied by two letters from reputable physicians certifying to your ability, character and habits.

The Hospital of the City and County of Denver is far from being what it might be and should be in many respects; but *it is a closed hospital,* and the responsibility for any maladministration and malpractice that does occur there can be fixed and fastened where it belongs.

It is interesting to remember in this connection that there are county hospitals in which osteopaths and perhaps other sectarian faddists practice and have representation on the staff and among the force of hospital interns.

The remedy for such an evil is so obvious that I refrain from mentioning it.

ADVANTAGES OF THE CLOSED HOSPITAL

It is evident to every one who has been in touch with hospital conditions East and West that the "closed" hospital is the better hospital in all respects. Its administration is easier and better, it may be more economically operated because of the simplified and standardized requirements of those who work in it, and, most important of all, the results are better and the mortality is lower.

Such careful scrutiny of those who are to be permitted to practice in the hospitals as is here proposed, the exclusion of those who are incompetent or unfit to do so, and the check a revocable permit affords will, in the end, convert the "open hospitals" of today into the "closed hospitals" of tomorrow, and the service and results should be greatly improved as a consequence of the change.

A PRACTICABLE PLAN

While criticizing conditions as they are, I have endeavored to point a way in which the worst of them may be corrected. I am firmly convinced that all efforts at standardizing hospitals must fail if effective measures are not first employed to reach and bring within the sphere of influence of such standards as may ultimately be adopted the unattached outsider who now has all the privileges of the hospital and none of the responsibilities and restraints imposed on the members of its staff. I am therefore indulging in a form of constructive criticism that should serve to eliminate the evident faults and at the same time furnish a foundation on which a substantial and enduring superstructure of standards for hospital unity and uniformity may ultimately be erected.

The effort for hospital standardization must contemplate as a primary and fundamental factor of its foundation the inclusion of *all* those physicians who are permitted to work in hospitals; and each of them, not excepting the members of the staff, should be required to place in the archives of the institution some statement such as is suggested in connection with this paper. For reference and for record such a statement would have great value, and none who work in the hospital should be excused or exempted from filing such a record regarding his history and experience; for, if the members of the staff file such a statement, it becomes much easier to demand that others do so.

Permits to practice in a hospital, or appointments as associate or attending physicians, should be made revocable for cause, thus providing a double check on incompetence and unscrupulousness, the check on entry and the implied or impending revocation of the privilege accorded if the work or conduct of the individual is not what it should be.

All of this may appear to be utopian and impracticable. I have considered it carefully for a long time and I do not think it so. I believe that if once inaugurated and made effective through the agency of the American College of Surgeons or the American Medical Association, it is workable and practicable and that it offers the key to the standardization problem. If in addition to, or as a substitute for, action by each hospital there could be in each state or each city a body representing all the hospitals, as I suggested many years ago,[2] the whole problem could be simplified.

One detail is essential for success, and this you may deem the most utopian dream of all, for it involves the integrity of purpose and the unbiased and unprejudiced action of all of those who pass upon and approve the applications of applicants. There is, however, a much broader and more liberal spirit among medical men than there used to be, and it is not unreasonable to hope that the administration of such a plan as is here proposed could be fairly, justly and equally administered.

2. Address of the President of the Colorado State Medical Society, Colorado Med., October, 1906; A Plea for Higher Hospital Efficiency and Standardization, Surg., Gynec. & Obst., June, 1915.

New York May Examination

Mr. H. J. Hamilton, assistant professor of examinations, New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, May 18-21, 1920. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 94 candidates examined, 62 passed and 32 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Yale University		(1916)	1
Howard University		(1913) 1, (1918) 1	2
Northwestern University		(1916)	1
Rush Medical College		(1917)	1
University of Illinois		(1917) 1, (1919) 1	2
Johns Hopkins University		(1916) 1, (1918) 2, (1919) 1	4
University of Maryland		(1911) 1, (1916) 1	2
Harvard University		(1917) 1, (1919) 3	4
Tufts College Medical School		(1917)	1
University of Michigan Medical School		(1917)	2
St. Louis University School of Medicine		(1920)	1
Washington University Medical School		(1917)	1
Columbia University College of Physicians and Surgeons		(1916) 2, (1918) 1, (1919) 6	9
Cornell University Medical College		(1918)	1
Fordham University School of Medicine		(1918) 1, (1919) 5	6
Long Island College Hospital		(1919)	3
New York Homeo. Med. College and Flower Hospital		(1916)	2
University and Bellevue Hospital Medical College		(1919)	3
University of Oregon Medical School		(1919)	1
Jefferson Medical College		(1914)	1
University of Pennsylvania		(1910) 1, (1917) 1	2
Vanderbilt University Medical Department		(1918)	1
University of Vermont		(1916)	1
National University of Athens		(1910)*	1
University of Naples		(1905)	1
University of Toronto Faculty of Medicine		(1898) 1, (1909) 1, (1911) 1, (1916) 1, (1919) 1	5
Queens University Faculty of Medicine		(1918) 1, (1919) 1	2
McGill University Faculty of Medicine		(1917)	1
	FAILED		
University of Illinois		(1920)	1
University of Louisville		(1902)	1
Johns Hopkins University		(1916)	1
Tufts College Medical School		(1913) 1, (1918) 1	2
Detroit College of Medicine and Surgery		(1918)	1
Dartmouth Medical School		(1905)	1
Columbia Univ. Coll. of Phys. and Surg.		(1917) 1, (1919) 1	2
Fordham University School of Medicine		(1915)	2
New York Homeopathic Medical College and Flower Hospital		(1915) 1, (1916) 1, (1918) 2, (1920) 1	5
University and Bellevue Hospital Medical College		(1917)	1
Hahnemann Medical Coll. and Hosp. of Philalelphia		(1918)	1
Jefferson Medical College		(1919)	1
University of Pennsylvania		(1912)	1
Vanderbilt University Medical Department		(1914)	3
University of Texas Department of Medicine		(1916)	1
University of Vermont College of Medicine		(1916) 1, (1919) 3	4
Queens University Faculty of Medicine		(1913)	1
Univ. of Toronto Faculty of Med.		(1910) 1, (1917) 1, (1919) 1	3
McGill University Faculty of Medicine		(1917)	1

* Graduation not verified.

Mr. Hamilton also reports that 29 candidates were licensed by endorsement of their credentials. Of these, 19 were granted licenses by reciprocity with other states; 8 by endorsement of their licenses on the basis of eminence and authority in the profession; 1 was granted a registration license, and 1 candidate was licensed on diploma. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1912)	Illinois
Northwestern University		(1914)	Ohio
Harvard University		(1910)	New Jersey
University of Michigan Medical School		(1906)	Ohio
Columbia University College of Physicians and Surgeons		(1885) Oregon, (1906)	New Jersey
New York Homeo. Med. Coll. and Flower Hosp.		(1911)	Delaware
Eclectic Medical College		(1917) 2	Ohio
Medical College of Ohio		(1907)	Ohio
Western Reserve University		(1907)	Ohio
Ohio State University College of Medicine		(1916)	Ohio
Jefferson Medical College		(1916)	New Jersey
University of Pennsylvania		(1913), (1917) Ohio, (1908)	New Jersey
Medical College of Virginia		(1915), (1918)	Virginia
University College of Medicine, Richmond		(1911)	Virginia

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Alabama School of Medicine		(1912)	Alabama
Yale University		(1902)	Connecticut
Kentucky University Medical Department		(1904)	Kentucky
University of Maryland		(1911)	Maryland
University of Michigan		(1884)	Missouri
Washington University		(1910)	Missouri
Columbia University College of Phys. and Surg.		(1909)	Penna.
McGill University Faculty of Medicine		(1895)	Quebec
	LICENSED BY DIPLOMA		
Bellevue Hospital Medical College		(1899)	1

Book Notices

RADIOGRAPHY IN THE EXAMINATION OF THE LIVER, GALL BLADDER AND BILE DUCTS. By Robert Knox, M.D. A Series of Articles Reprinted from "Archives of Radiology and Electrotherapy," July, August, September and October, 1919. Cloth. Price, $2.50. Pp. 64, with 64 illustrations. St. Louis: C. V. Mosby Company, 1920.

This work is thorough, well written and timely. The question of the roentgen-ray shadow evidence of gallstones is a daily one in general and special medicine and surgery. Many physicians have met so many disappointments that they seldom resort to roentgen-ray aid or refer suspected gallstone cases to the roentgenologist. Knox has presented a careful analysis of the several factors bearing on the technic of obtaining gallstone shadows. No material departure from the old methods of procedure is presented, but certain steps are accentuated and stressed, while the author's experience has shown that particular features aided in the success of the examination. The intimate gross anatomy of the gallbladder and liver region is demonstrated fully, with illustrations from standard authorities. Certain important points not usually realized are brought out prominently. Some of these have a decided influence on success or failure in roentgen-ray examination of the gallbladder. The chemistry of the various kinds of stones found in the gallbladder is fully detailed, and the shadow appearance of these is well illustrated. Considerable roentgen-ray experimentation on different densities of the stones is presented which show the most favorable exposure, spark gap and other items of technic. The differential diagnosis is thoroughly presented. Knox points out many possible sources of error in gallstone diagnosis, and he presents illustrations of some instances in which shadows could easily be mistaken for gallstones. The book will serve as an incentive to more and better gallbladder roentgen-ray work, and is a valuable addition to the roentgen-ray literature of today.

PLASTIC SURGERY OF THE FACE BASED ON SELECTED CASES OF WAR INJURIES OF THE FACE, INCLUDING BURNS. With Original Illustrations. By H. D. Gillies, C.B.E., F.R.C.S., Major R. A. M. C., Surgical Specialist to the Queen's Hospital, Sidcup. With Chapters on The Prosthetic Problems of Plastic Surgery by Capt. W. Kelsey Fry, M. C., R. A. M. C., Senior Dental Surgeon, Queens Hospital, Sidcup, and Remarks on Anaesthesia by Capt. R. Wade, R. A. M. C., Assistant Anaesthetist, St. Bartholomews Hospital. Cloth. Price, $15. Pp. 408, with 844 illustrations. New York: Oxford University Press, 1920.

Major Gillies began the treatment of war injuries of the face and jaw at Cambridge Hospital, Aldershot, England, in January, 1916. Later the hospital was removed to Sidcup, where patients with facial injuries from the British, Canadian, Australian and New Zealand forces were collected in one hospital. In 1908, Col. V. P. Blair of St. Louis arrived, and the hospital had the advantages of consultation from all of the British dominions and from America. Other Americans and colonial officers arrived from time to time so that this book, based on the work there carried out, may be said to represent the last word on the subject it covers. It is doubtful whether, ever again there will be such an enormous mass of material accumulated for study as was available in the institution mentioned. The book is largely made up of case reports, with a general discussion on each particular type of injury. There are 844 excellent illustrations, beautifully printed on the best stock. Any one who attempts to do work in this exceedingly special branch of surgery will find this book full of practical suggestions.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. By J. J. R. Mcleod, M.B., Professor of Physiology in the University of Toronto. Assisted by Roy G. Pearce, A. C. Redfield, and N. B. Taylor and by Others. Third edition. Cloth. Price, $10. Pp. 922, with 243 illustrations. St. Louis: C. V. Mosby Company, 1920.

In his preface to the third edition, the author points out that the section on the nervous system has been entirely recast and rewritten by Dr. A. C. Redfield, incorporating also an account of the fundamental principles of neuromuscular physiology. The section on chemistry of respiration has been rearranged so as to include recent work on the effects of the deficiency of oxygen on the respiratory center, as well as the clinical applications. New chapters have been added dealing with the measurement of the functional capacity of the heart, the

principles of ventilation, and the therapeutic value of oxygen. Subjects in which numerous advances have been made recently, such as vitamins, the capillary circulation, surgical shock and the endocrine organs, have also been brought up to date. In order to make room for the new material, technical details have been put in smaller type and some of the illustrations have been omitted, the book thus retaining approximately the same size as formerly. As stated in previous reviews, this is a valuable reference work in the distinct field which it covers.

A PRACTICAL MEDICAL DICTIONARY OF WORDS USED IN MEDICINE WITH THEIR DERIVATION AND PRONUNCIATION, INCLUDING DENTAL, VETERINARY, CHEMICAL, BOTANICAL, ELECTRICAL, LIFE INSURANCE AND OTHER SPECIAL TERMS; ANATOMICAL TABLES OF THE TITLES IN GENERAL USE, AND THOSE SANCTIONED BY THE BASLE ANATOMICAL CONVENTION; PHARMACEUTICAL PREPARATIONS, OFFICIAL IN THE U. S. AND BRITISH PHARMACOPOEIAS AND CONTAINED IN THE NATIONAL FORMULARY; CHEMICAL AND THERAPEUTIC INFORMATION AS TO MINERAL SPRINGS OF AMERICA AND EUROPE, AND COMPREHENSIVE LISTS OF SYNONYMS. By Thomas Lathrop Stedman, A.M., M.D. Sixth edition. Cloth. Price, $6.50. Pp. 1144, with illustrations. New York: William Wood and Company, 1920.

A dictionary is a difficult book to review. One might say it begins with A, the chemical symbol of argon, and ends with zymurgy, the branch of chemistry which deals with fermentation as applied to the manufacture of alcoholic beverages, thus coming to a logical conclusion for these times. En route, it takes up a number of very interesting subjects; in fact, it covers the whole field of medical science. This edition contains many new words, enlarging the book to the extent of twenty pages. Incidentally, this dictionary, under definitions of pharmaceutic preparations, provides an epitome of the Pharmacopeia and National Formulary. There are also numerous valuable short-cut tables.

PATHOGENIC MICRO-ORGANISMS. A Text-Book of Microbiology for Physicians and Students of Medicine. By Ward J. MacNeal, Ph.D., M.D., Professor of Pathology and Director of the Laboratories in the New York Post-Graduate Medical School and Hospital, New York. (Based upon Williams' Bacteriology.) Second edition. Cloth. Price, $4. Pp. 488, with illustrations. Philadelphia: P. Blakistons Son & Co., 1920.

This standard textbook on pathogenic organisms has many features to commend it, particularly the simple classifications, up-to-dateness and the point of view of the discussions, which consider bacteriology as a branch of general science. The author points out that matters of controversy have received less attention than conclusive advances in the subject. This is, of course, the proper method of presenting any scientific subject in a textbook for students. There are numerous excellent illustrations, and the book is of a convenient size, which students will appreciate.

AUTOEROTIC PHENOMENA IN ADOLESCENCE. An Analytical Study of the Psychology and Psychopathology of Onanism. By K. Menzies. With a Foreword by Dr. Ernest Jones. Cloth. Price, $1.50. Pp. 94. New York: Paul B. Hoeber, 1919.

In a foreword, Dr. Ernest Jones points out that this subject has seldom been dealt with scientifically; too frequently as discussed by father, schoolmaster, priest or doctor, the information conveyed has served merely to increase rather than decrease the disturbed state of mind. Mr. Menzies treats it from the standpoint of the psychologist based on a belief in the value of psychanalysis; he has thoroughly covered the literature of the subject, and believes that the cure lies in analysis, sympathy and encouragement. Whether or not the medical reader is in complete sympathy with his ideas, the book represents a scientific attempt to discuss a difficult subject.

THE OXFORD MEDICINE. By various Authors. Edited by Henry A. Christian, A.M., M.D., Hersey Professor of the Theory and Practice of Physic, Harvard University, and Sir James Mackenzie, M.D., F.R.C.P., LL.D., Consulting Physician to the London Hospital. In Six Volumes. Volume II: Diseases of Bronchi, Lungs, Mediastinum, Heart, Arteries, and Blood. Cloth. Price, $90, set. Pp. 817. New York: Oxford University Press, 1920.

This volume maintains the high standard set by the previous volume of this system. The essays are all by well-known authorities, who have carefully reviewed the literature selecting that which is reliable. The loose leaf method provides for keeping the system up to date.

Social Medicine and Medical Economics

PHYSICAL EXAMINATION OF INDUSTRIAL WORKERS

Results of an Investigation by the Conference Board of Physicians in Industry

F. L. RECTOR, M.D.
Secretary, National Industrial Conference Board
NEW YORK

Physical examination of wage-earners is a relatively new procedure in industrial life, but one which, especially during and since the period of the war, has gained considerable popularity and has opened up an entirely new field, not only for the efforts of medical men, but also for the development of business efficiency.

In order to learn something of the recent experience with physical examinations of employees, the Conference Board of Physicians in Industry[1] early in 1920 sent questionnaires to 100 representative industrial establishments asking for certain information "in respect to methods and records of physical examination, average time consumed, examination of women employees by men or women physicians, etc." I shall present a brief analysis of the replies received.

Of the 100 questionnaires sent out, fifty-six were returned to the board. Twenty-two of the establishments reporting stated that they did not make physical examinations of their employees, or that, for one reason or another, they could not furnish the information desired; thirty-four schedules contained information for study. These thirty-four schedules represent fifteen separate industries and a working force of 410,106, of whom 327,183 were males and 82,923 were females. The fifteen industries included were abrasives, automobiles, banking, chemicals, electrical goods, explosives and dyes, light and power, metal trades, petroleum, rubber, shipbuilding, steel, textiles, tobacco and transportation.

CONDUCT OF THE EXAMINATION

Among the thirty-four plants included in this investigation, physical examinations of applicants for employment, or of employees, were first introduced in 1900. In only two plants were they in use prior to 1910, and in twenty-three of the thirty-four plants they were installed in 1914 or thereafter. With one exception, physical examinations, once introduced, had been continuously employed in all of these plants. In the one instance in which physical examinations were discontinued, a textile mill, "labor reasons" were given as the cause, but it appears that in this case the system was scarcely given a fair trial, since it was reported as having been used in only a part of the plant, and there for only six months. Twelve plants reported examinations at the present time to be more complete than when the system was started, while in one case a change to a less complete examination was due to the labor union's opposition to having men stripped for examination. The remaining twenty-one plants either reported no change in methods, or did not answer this question.

Physical examination was conducted in all of the thirty-four establishments at the plant by the plant physician. No outside physicians' certificates were accepted in lieu of examination. In seven of the thirty-four plants a woman physician was employed. In one other a woman physician is provided on

1. The Conference Board of Physicians in Industry is a voluntary, informal association of medical directors in industrial plants, organized for the exchange of ideas and experiences and the formulation of suitable standards and methods in industrial medical practice. The board acts in an advisory capacity to the National Industrial Conference Board on matters within the field of industrial medicine and physiologic research.

request of the women to be examined. In the other plants the examination of both sexes was made by male physicians. It was stated that the principal advantages of employing women physicians for this work were the relief from embarrassment to women applicants, and the ability to obtain a more complete examination.

The investigation showed that in eighteen plants the physical examination was made before employment; in twelve more, at the time of employment; and in two others, after employment. Two establishments did not answer this question. It was also brought out that in only four plants did the physicians interview applicants on matters other than health, and that in eighteen of the plants the physician was in possession of the application card at the time of examination.

The replies to the questionnaire brought out that in twenty-four of the plants examination is required of all employees; in five, examination is required of men only; and in one plant only a special group is examined. In certain industries, special examinations are required for applicants for certain occupations, and in these occupations periodic reexaminations of employees are usually made. Some of the prospective or actual employees subject to special physical examinations are policemen, firemen, railroad men, cranemen, sand blasters, dye workers, lead workers, food handlers, mine rescue service men, and workers with acids and in especially dusty processes.

METHOD OF EXAMINATION

The replies to the questionnaire indicate that, in making the examination in the privacy of the physician's office, in ten plants the men were unclothed to the same extent as when examined for the army; in four plants, shoes were not removed; in ten plants, men were not examined below the waist; in nine plants, the chest was first examined, trousers later being lowered for an inspection for varicose veins; in one plant, the men were not unclothed. In two plants, women were unclothed but covered by a sheet, the examination being conducted by a woman physician; in six plants, women were not examined below the waist; in ten plants, women were examined with the waist open only for testing the heart and lungs; in the remainder of the plants, women were examined for special reasons which required little or no disarrangement of their clothing.

In addition to the routine examinations suggested above, ten plants reported that urinalyses were made. In eight plants, blood pressure is taken regularly. In the other plants, practice as regards these procedures, urinalyses, blood pressure, and Wassermann and tuberculosis tests are made as indicated.

The time required for making the physical examinations varied from three to forty minutes; in eleven plants the time was five minutes or less; in thirteen plants the time was from five to fifteen minutes; in eight plants the time was from fifteen to twenty minutes; in one plant it was more than twenty minutes, and one plant reported "no definite time." The average time required in thirty-three plants was eleven minutes per person. If from this average those plants are eliminated in which the examination was very thorough, or for special reasons consumed longer periods of time, the average amount of time required for an examination was eight minutes. In many of the larger plants a satisfactory examination was given in from four to six minutes, barring special cases.

RESULTS OF EXAMINATIONS

In twenty-eight of the plants reporting, the results of the physical examinations are used as an employment guide to a greater or less extent. Five plants reported no such use, and one plant did not answer this question.

Physical defects disqualifying for employment varied in the establishments studied from none to many, depending on the character of the industry and the work to be done. In every case the reason for imposing restriction of employment on defective workers was based on the fact that, if employed, they would be a menace to themselves, to others or to property. The physical defects mentioned most often in this connection were hernia, amputations of arm or leg, loss of vision of one or both eyes, defective vision, cardiac disease, venereal disease, contagious or infectious diseases, kidney disease, tuberculosis, deformity, physical debility, deafness, varicosities and defective mentality.

Defects permitting limited employment were also numerous, but the most common were compensated heart lesions, hernia with truss, varicosities, defective vision, deformities, defective hearing, varicocele, first degree flatfoot and lung diseases (type not specified).

Twenty-three plants reported that they accept employees with hernia, in some cases to a limited number, and in others only on the execution of a release from responsibility or for special work only. In fourteen of the twenty-three plants no restrictions as regards employees with hernia were noted. Thirty-two of the thirty-four plants employ workers with flatfoot; but in eleven of these, such employees are restricted to special work. Fifteen plants accept workers with varicosities, but of this number four limit the employment of such workers, or require them to sign waivers.

In virtually all of the thirty-four plants reporting, it was stated that, whenever possible, defectives were accepted rather than denied employment. When employed, defectives are placed under the supervision of the medical department and are permitted to continue in their occupation as long as they are unaffected by the work in which they are engaged. It will be remembered that more than 30 per cent. of all men eligible for military duty were rejected in the draft on account of physical defects. Only 4.6 per cent. of those reported on in this investigation were rejected for the same reason, and if those are excluded who were rejected for special work, such as that of trainmen, cranemen and inspectors, wherein defective vision or defective hearing was the cause of rejection, but who would have been acceptable for certain other kinds of work, the average proportion of rejection was only 2.8 per cent. Such results show an earnest effort on the part of the examining physicians to place workers in industry rather than deny them employment, unless when employed they become a menace to themselves, to others or to property. Of those accepted for employment it was shown that 30.3 per cent. were substandard, while the average of those reporting the number rated as A-1 was 57 per cent.[2]

Twenty-four plants gave the number of persons examined during the preceding year. Those reporting the number examined by sex showed that in plants employing a total of 209,777 males, there were 178,367 physical examinations of applicants for employment; and in plants employing 19,632 females, there were 29,074 examinations. The frequency of reexamination of employees, as reported, varied from one month, in certain hazardous occupations, to three years. Seven plants reported reexaminations every six months or oftener; four plants reported reexaminations annually; two plants reported reexaminations every two years; and one plant reported reexaminations every three years. Other plants stated that the time of reexamination was "periodic," "on request," "when indicated," etc. Only two plants reported reexaminations of workers on departmental transfers.

The number of workers who were reported as objecting to the physical examination was negligible. The largest num-

2. It is of interest to note that there seems to be no unanimous opinion among those reporting as to what constitutes an A-1 employee. For example, in two similar industries in the same city one physician reported 20 per cent. of his employees to be in this class, and the other reported "practically all." Obviously, one or both are wrong, since it is scarcely to be expected that one industry secured the cream of the workers to the virtual exclusion of all others.

ber given was 200, among 62,000 employees, where the system of physical examination had been in operation for two years. Ten plants employing 155,010 workers had had no refusals. A plant employing 15,000 reported six objections in three years; another, with 3,300 employees, had had twelve refusals in nine years; still another, with 7,900 employees, reported a few objections.

The reasons advanced against physical examinations in the majority of cases were "red tape" and "objection to exposure." Other reasons were "just examined," "too much trouble," "can get employment elsewhere." Many industrial physicians report an increasing demand on the part of workers for physical examinations at regular intervals.

It is interesting to note the results of the introduction of physical examinations in industry, as reported by the examining physicians. Among these were that physical examinations increase efficiency, result in fewer accidents, lessen absence and labor turnover, eliminate tuberculosis from the plant, reduce the number of venereal disease cases, eliminate other infectious and contagious diseases, make for better adaptation of workers to their jobs, reduce compensation claims, give a clear record of impaired joint function, save useless litigation, increase number of days at work, and satisfy employees that their interests are being safeguarded.

SUMMARY

The results of the board's investigation of physical examination of industrial workers may be thus summarized:

1. Thirty-four replies were received, including fifteen industries and 410,106 employees, of whom 327,183 were men and 82,923 were women.

2. Physical examinations among the industrial establishments reporting were first introduced in 1900, but in the majority of cases they have been in operation only since 1914.

3. Where physical examinations have been given a fair trial, they have proved their value and have been continued and, with one exception, the original scope of the examinations has been maintained or extended.

4. The average time consumed in making regular physical examinations at establishments reporting was eight minutes per person examined.

5. An earnest effort was being made in the majority of plants reporting to place defectives, rather than eliminate them from industry.

6. The average percentage of rejected applicants for employment was only 4.6, and, by eliminating certain special cases, was only 2.8.

7. There was no uniformity of time for reexamination of employees.

8. Objections to physical examinations on the part of prospective or actual workers were negligible.

CONCLUSIONS

This investigation shows that substantial progress has been made in the application of medicine to industry. The position of the physician in industry has been made secure, and he should now bend his efforts to the solution of industrial problems closely related to the medical work. By his training and experience he is qualified to advise with the management as to the placing of employees to the best advantage of themselves and the industry with which they are connected. He is also in a position to suggest necessary improvements in the fields of lighting, ventilation and general sanitation, as well as of personal hygiene, in order that employees may be kept in good physical condition.

A classification of the results of physical examinations is necessary in order that workers may be properly placed. The physical capacities and limitations of an A-1 worker and of a substandard worker should be fairly well defined. For example, only workers without physical defects should be placed in the A-1 class. This will be a relatively small group as compared with the vast majority of workers, who suffer from some slight physical or functional disability, but who are well able to carry on practically any work to which they may be assigned.

A classification of findings of physical examinations which tends to place the worker in his proper group has been adopted and promulgated by the Conference Board of Physicians in Industry, after a careful analysis of a very large number of physical examination records. That such a classification is needed has been demonstrated by the analysis of the reports summarized above.[3] This classification is as follows:

Class 1: Persons physically fit for any employment.

Class 2: Persons physically fit for any employment but below par in physical development or other condition.

Class 3: Persons physically fit only for certain employment when specifically approved for it by examining physician.

Class 4: Persons physically unfit for any employment.

Knowing the requirements of the work which the applicant for employment is to do and having a record of his physical condition, the task of the industrial physician then becomes one of physically adapting the employee to his work, with the assurance that if this is done properly there will be greater contentment, lessened labor turnover, and greater production.

10 East Thirty-Ninth Street.

Medicolegal

A Futile Subterfuge—Prescribing Home Remedies

(State v. Till (Wis.), 177 N. W. R. 589)

The Supreme Court of Wisconsin, in affirming a judgment of conviction of the defendant of practicing medicine without a license, says that the evidences offered on behalf of the state tended to show that on June 20, 1917, a Mrs. Thompson went to the home of the defendant, taking with her her little girl, who was ill. A helper of the defendant handed her a card which she signed and returned to the helper, with 25 cents. The card read:

> Taking upon myself all risk involved and absolving John Till from any and all claims for damages arising out of anything that he may do or omit to do in reference to and connection with in caring for or nursing for myself or my ailments, I request John to examine into my physical condition, and as a matter of humanity and benevolence (*although he does not claim to be a member of any profession*) to attempt in his own way and by such means and agencies as he may deem best, the nursing and caring for, and if possible the cure of my ailments. I appreciate the fact that nursing and relief or curative treatment and nursing sometimes occasion pain. I make this application for help of my own free will. No enticement has been used as far as I am concerned. I am acting in good faith.

Mrs. Thompson was admitted with her sick child to Till's office, where he examined the child and gave her medicine, with directions for its use, $1 being paid for the medicine. It appeared from the testimony that the defendant put his hand beside the child's ear, said that she had infantile paralysis caused by the stomach, and that he would give her some medicine, directing that the medicine be given to her one-half teaspoonful three times a day; that she should be rubbed with liniment every evening, and should return in a month. It was contended on behalf of the defendant that, inasmuch as he did not hold himself out as a doctor, and rendered his services gratuitously, he was not practicing medicine, and so not required to have a license. It was insisted that the 25 cents paid to the helper and the dollar paid after the advice was given were for medicine, and not for the advice. But the jury

3. Fifteen of the thirty-four plants submitted schemes of classification of the findings of their physical examinations. Some used letters; some used numbers; others employed the terms "accepted" and "rejected"; still others classified their results according to the nature of the work to be done. Eight of the fifteen used a classification of four divisions; two used one of three divisions, while the others gave no definite classification.

was not bound by the declaration contained in the card that the services which Till did were rendered as a matter of humanity and benevolence. The jury might properly find, as it must have done, that the card and the sale of the medicine were a mere subterfuge and an attempt to avoid the prohibition of the statute.

The court is further of the opinion that the claim of the defendant that he was within the provisions of Section 1435 j of the Statutes of Wisconsin of 1917, relating to the gratuitous prescribing and administering of family remedies could not be sustained. While it did not appear what the exact nature of the medicine furnished the patient was, the statute is certainly not intended to permit of the prescription of family remedies as a business, and the treatment was certainly not rendered in an emergency.

Nor does the court think that it was error to admit evidence as to transactions had between Mrs. Thompson and the defendant in November, 1916, and in February, 1917, in connection with visits of herself and little girl to the defendant, the jury being instructed that that evidence was admitted for the purpose of throwing some light on the character of the transaction and of the visit to the defendant on June 20, 1917, and not as proof of any violation of the law prior to June 20. So limited, that testimony was properly admitted. It certainly tended to characterize the services rendered by the defendant on June 20. That was particularly true when considered in connection with the provision of the statute which permits the administering of remedies in cases of emergency. While it was not necessary, it was proper for the state to negative any possible inference of that kind. It was properly admitted in this case for the purpose of negativing an innocent intent on the part of the defendant.

Of What Negligence May Consist—Treatment of Hernia

(Stenkowiczki v. Lytle (Wis.), 177 N. W. R. 849)

The Supreme Court of Wisconsin says that negligence in the course of a treatment may consist in the adoption of a wrong method of treatment, or it may consist in the negligent application of a proper method. In this case the plaintiff, who was affected with a hernia and had been treated by the defendant, contended that he had been damaged by the defendant's negligent and improper treatment. The defendant denied that he was negligent, or that the treatment was improper. The evidence showed that he used an injection method of treatment. It appeared from his testimony that the idea was that by injecting a fluid into the tissues in or adjacent to the upper inguinal ring, inflammation would set up which, when it subsided, might cause adhesions that would close the ring or opening and thus prevent further hernia. Several physicians of unquestioned repute and experience testified that such method was obsolete and of no value; that it was not a proper method; that it was absolutely the wrong treatment; and that the plaintiff's injuries were due to the treatment administered by the defendant. On the oher hand, several physicians testified on behalf of the defendant that the treatment was a recognized or proper one, but not much used at present. Under such state of the evidence it was a jury question whether the defendant was negligent in the treatment of the plaintiff. The jury found that (1) the defendant was guilty of negligence in the course of his treatment of the plaintiff; (2) such negligence on the part of the defendant was the proximate cause of the plaintiff's injury; (3) the defendant did not use a method in the treatment of the plaintiff ordinarily used by physicians and surgeons of good standing of the same system or school of practice as that of the defendant in that vicinity or locality, having due regard to the advanced state of medical or surgical science at the time of the treatment; (4) no want of ordinary care on the part of the plaintiff proximately contributed to his injury, and (5) damages in the sum of $1,350. The civil court in which the case was tried awarded the plaintiff a judgment on the special verdict, and the defendant appealed to the circuit court, which reversed the judgment and ordered a new trial on the ground that the special verdict did not include one disputed issue, namely, whether the treatment used by the defendant in ministering to the plaintiff was a proper treatment as recognized by physicians and surgeons having due regard to the advanced state of medical and surgical science. The circuit court held that the third finding did not cover that issue, because it did not determine whether the treatment was a proper or an improper one, irrespective of whether it was or was not one ordinarily used. If it was a proper treatment, it need not be one ordinarily used. But the first finding established that the defendant was negligent in the treatment of the plaintiff, for negligence in the course of a treatment may consist in the adoption of a wrong method of treatment, as here testified to, or it may consist in the negligent application of a proper method, not here claimed to be the case. So the jury in answer to the first question found that the defendant adopted an improper method of treatment, and the third quesion therefore became wholly immaterial. The defect therein did not in any way affect the answer to the first question which, with the answers to the second, fourth and fifth questions, made a complete verdict. Wherefore, the judgment of the circuit court is reversed, and the cause remanded, with directions to affirm the judgment of the civil court in favor of the plaintiff.

Poor Districts Not Liable for Negligence of Officers or Act of Patients

(Wildoner v. Central Poor District of Luzerne County (Pa.), 110 Atl. R. 175)

The Supreme Court of Pennsylvania says that poor districts acting as public agencies in the performance of functions necessary to the well-being of the government are not to be held liable for the negligence of their officers. The erection of houses for the accommodation of the poor and the maintenance and care of the inmates while lodged in these institutions are particular charges on the respective poor districts or counties, as the case may be. Neither the district nor the county should be held liable for the irresponsible acts of these patients, who at times wander about aimlessly through the surrounding country and whose acts in the great majority of cases are harmless, coming from unbalanced minds. It is a known fact that in the majority of cases in county homes the inmates suffer from this affliction. It would be an enormous burden to saddle on the respective districts responsibility for the acts of these patients. Wherefore, the court affirms a judgment in favor of the defendant, which was sued for damages which the plaintiff alleged that he sustained through a fire caused by the acts of the inmates of the defendant's charitable institution, who were clearing land and burning brush, the fire spreading through their negligence.

Evidence of Other Surgeons as to Care and Skill

(Shaw v. Klein (Miss.), 83 So. R. 620)

The Supreme Court of Mississippi, in affirming a judgment in favor of the defendant, a physician and surgeon, says, in a brief opinion, that he performed a minor surgical operation on the plaintiff, who afterward instituted this action to recover damages alleged to have been sustained by him because of the negligence of the defendant in performing the operation. An assignment of error presented the question of the admissibility of the testimony of several surgeons that the defendant was a careful and skilful surgeon. The plaintiff's declaration expressly charged the defendant with the "want of skill and care," thereby putting his possession thereof directly in issue; consequently evidence thereof was admissible. Whether this evidence would have been admissible in the absence of such an allegation was not before the court for consideration.

Duty to Exercise Reasonable Care and Skill

(Grubb v. Elrod (Ga.) 102 S. E. R. 908)

The Court of Appeals of Georgia, Division No. 2, in affirming a judgment in favor of the plaintiff, makes no statement of facts and renders no opinion. It contents itself with the briefest kind of declaration in a syllabus which says that, even though a physician or surgeon may be skilled in his profession, he is nevertheless under a duty to exercise reasonable care and skill in the performance of an operation, and his failure to do so is a tort (or wrongful act) for which a recovery of damages may be obtained.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

Nov. 15, 1920, **26**, No. 5

*Hypersensitiveness to Arsphenamin Following Exfoliative Dermatitis; A Cutaneous Test. H. C. Stuart and E. P. Maynard, New York.—p. 511.
*Epidemic Infectious Jaundice and Its Relation to Therapy of Syphilis. J. H. Stokes, R. Ruedemann, Jr., and W. S. Lemon, Rochester, Minn.—p. 521.
*Pathologic Physiology of Chronic Pulmonary Emphysema. R. W. Scott, Cleveland.—p. 544.
*Chemical Pathology of Blood in Pernicious Anemia and Other Severe Anemias. A. W. Peters and A. S. Rubnitz, Omaha.—p. 561.
Pathology of Epidemic Pneumonia in Mice and Guinea-Pigs. J. J. Keegan, Boston.—p. 570.
*Case of Hemorrhagic Smallpox; Rôle Played by Hemolytic Streptococcus. R. M. Kempton and J. P. Parsons, Ann Arbor, Mich.—p. 594.
Rheumatic Myocarditis; Histogenic Study of Type Cells of Aschoff Body. R. C. Whitman and A. C. Eastlake, Boulder, Colo.—p. 601.
*Study of Lesions Produced by Filtrates of Influenza Sputum. M. W. Hall, Ft. Sam Houston, Texas.—p. 612.
Chronic Bradycardia. F. A. Willius, Rochester, Minn.—p. 630.

Skin Reaction Index in Arsphenamin Treatment.—A case of exfoliative dermatitis or chronic arsenic poisoning is reported by Stuart and Maynard. The first cutaneous manifestations were persistent itching and papular eruptions on the wrists and shins. Cutaneous hypersensitiveness to arsphenamin and neo-arsphenamin occurs in patients who have suffered from exfoliative dermatitis. This was demonstrated by typical skin reactions in two such patients by means of intradermal injections of minute dilutions of the drug, but could not be demonstrated in a third patient, perhaps because the tests were made nine months after the dermatitis when the hypersensitiveness had subsided. This supposition, if substantiated, would make the skin reaction of practical importance in determining when it is safe to renew arsphenamin treatment.

Epidemic Infectious Jaundice.—A critical examination by Stokes and Ruedemann of the data obtained from seventy cases of jaundice indicates that whole several distinct types of jaundice are probably represented in the series, the large proportion were not ascribable directly, if at all, to the effects of syphilis, or of antisyphilitic treatment with either asphenamin or mercury. Syphilis, as either a primary or a secondary etiologic factor, is largely excluded by the fact that the overwhelming proportion of the patients had had so much treatment before the jaundice occurred that Herxheimer effects and hepatorecurrences were practically eliminated. Moreover, two thirds of the patients recovered while antisyphilitic treatment was suspended, and one fourth of those who recovered were not again treated for the disease after the jaundice appeared. Four of the patients who were jaundiced did not have syphilis. The study of this series of seventy cases disclosed strong circumstantial evidence to the effect that an infectious agent, possibly associated with epidemic respiratory infections, was the exciting cause. Forty-one per cent. of the patients had coryza, tonsillitis, pharyngitis, influenza, "grippe," bronchitis, pneumonia or otitis media (named in order of frequency), intimately associated with the prodromal symptoms or actual appearance of the jaundice. Fifty-nine per cent. of the cases were associated with epidemics of colds and influenza in the vicinity; in 73 per cent. contributory evidence was obtained of a possible infectious factor in the etiology of the jaundice. Incomplete bacteriologic studies of seven cases were unsuccessful in identifying a causative organism.

Pathologic Physiology of Chronic Pulmonary Emphysema.—Two patients with chronic pulmonary emphysema of the so-called "large lunged" type were studied by Scott over a period of several months and compared with normal persons as controls. It was found that the emphysematous patients breathed high percentages of carbon dioxid (from 8 to 10 per cent.) for ten and fifteen minute periods with relatively little increase in the minute volume, and without subjective symptoms of distress. Slightly higher percentages were intolerable and caused a sharp "break," with symptoms of acute distress, such as headache, nausea and dizziness. The concentration of inspired carbon dioxid necessary to produce signs of intolerance was found to vary inversely with the length of the breathing period. There was a definite elevation in the free and combined carbon dioxid of the blood in emphysema, but the ratio $\frac{H_2CO_3}{NaHCO_3}$ was such as to maintain the H-ion concentration within normal limits. It is suggested that the increased buffer of the body fluid in emphysema compensates to some extent for the impairment of pulmonary ventilation and offers a certain protection against undue fluctuations in H-ion concentrations which might otherwise occur.

Chemical Pathology of Blood in Pernicious and Other Anemias.—Human blood from three series of persons was examined by Peters and Rubnitz for its concentration in (*a*) total solids, (*b*) total nitrogen in whole blood, (*c*) total nitrogen in plasma. The first series comprised physiologically normal persons, the second cases of pernicious anemia and severe secondary anemia, the third cases of various pathologic conditions other than severe anemia. The total solids of the blood of pernicious anemia and also of severe secondary anemia show great decrease from normal values or even from that of other chronic hospital cases. This decrease is due primarily to the large diminution in number of the red corpuscles and only in minor degree to decrease in plasma solids. The total nitrogen of the whole blood in pernicious anemia and also in severe secondary anemias shows a great decrease from the normal values. The principal cause here also is diminution in the number of the red corpuscles. The percentage of total solids and of whole blood nitrogen are the essential chemical correlates of the number of red corpuscles, i. e., there is a marked proportionality in these two independently determinable factors. The total plasma nitrogen, in contradistinction to the total blood nitrogen, either maintains its normal limits of constancy or tends to increase in percentage above that of most normal bloods, but in any case it has no tendency to decrease its nitrogen value. Since in all severe anemic conditions the whole blood nitrogen decreases while the plasma nitrogen tends to increase, the resultant ratio of the first to the second, which constitutes a nitrogen index, shows from the direction of variation in both factors a natural tendency to diminish in proportion to the severity of the anemia. The authors suggest that this index may be used as an indicator of the state and progress of the anemic condition.

Hemolytic Streptococcus in Hemorrhagic Smallpox.—In the case of typical purpura variolosa reported by Kempton and Parsons the hemolytic streptococcus was present in the circulating blood as early as the first day of the disease, and continued throughout the course of the disease, a positive culture having been obtained on the thirteenth day. A noteworthy point in this case is the characteristic early appearance of the hemorrhages, the eruption developing and following the normal order through to the crusting stage on the eleventh to the fourteenth day. The case may be regarded as a combination of purpura variolosa and purpura hemorrhagica pustulosa, for as the lesions developed hemorrhage directly into many of them took place. This patient conquered her smallpox in spite of the severe secondary infection, but succumbed to the latter when pneumonia, probably of the hemolytic streptococcic type, developed on the twelfth day of the disease. This lends support to the opinion of Ewing, Councilman and Maurice that the streptococcus infection is of more importance in the fatal termination of variola than the variola virus itself.

Filtrable Agent Cause of Influenza.—The results obtained by Hall seem to give support to the theory of a filtrable agent as the primary cause of influenza. Certain experiments indicate that the active agent concerned is markedly resistant to heat, and probably is mainly intracellular in location.

Archives of Surgery, Chicago

November, 1920, **1**, No. 3

*Report of Tetanus. A. P. C. Ashhurst, Philadelphia.—p. 407.
*Rib Grafting Operations; Repair of Bone Defects and End-Results. L. Eloesser, San Francisco.—p. 428.

*Establishment of Surgical Principles in Treatment of Fracture of Neck of Femur. A. Whitman, New York.—p. 469.
*Twelve Cases of Thrombosis of Cavernous Sinus. J. J. Chisolm, Baltimore, and S. S. Watkins, Louisville.—p. 483.
*Duodenal Diverticula; Report of Case. E. C. Moore, Los Angeles. —p. 513.
*Late Results in Autogenous Internal Bone Splinting. W. H. Thomas, Philadelphia, and W. A. Clark, Pasadena, Calif.—p. 524.
*Chronic Duodenal Dilatation; Its Concomitant and Sequential Pathology. H. Crouse, El Paso, Texas.—p. 538.
*Roentgenologic Study of Course of Postinfluenzal Pyopneumothorax. G. P. Grabfield, Boston, and T. L. Squier, Ann Arbor, Mich.—p. 564.
*Rôle of Cortical Lymphatics in Extension of Tuberculosis within Kidney. E. G. Crabtree, Boston.—p. 581.
*Abdominal Incisions. E. P. Quain, Bismarck, N. D.—p. 585.

Tetanus.—This report on tetanus was made by Ashhurst to the Société Internationale de Chirurgie, Paris, July, 1920. Besides discussing the pathogenesis, prophylaxis and treatment of tetanus, the author analyzes eighteen cases. Seven of these patients died (38.8 per cent.), one from pneumonia, after apparent recovery from the tetanus. In three other fatal cases, treatment was neither early nor efficient enough to be successful, while the death of one patient was clearly due to an overdose of magnesium sulphate intraspinally. This leaves thirteen cases in which treatment may be regarded as early and efficient; only two of these patients died, a mortality of 15.38 per cent. The importance of early and efficient treatment is emphasized. This includes, as stated in one case in illustration, the use of concentrated antitoxin intraspinally by lumbar puncture; by mouth, chloral hydrate and sodium bromid; antitoxin intravenously.

Rib Grafting.—Eloesser discusses the theoretical and practical advantages of the rib graft and the technic of rib grafting. Of a series of twenty-two cases reported, three were failures, thirteen were successes and six were partial successes.

Fracture of Neck of Femur.—A fracture of the neck of the femur, Whitman says, is a fracture like any other fracture, even though it often occurs in subjects that one would not be anxious to treat for any complaint whatever; also that the same standards of treatment and the same judgment of results should be applied to this fracture as to any other. If surgeons do not care to apply treatment in a given case, they must explain to those concerned that the character of the patient makes it inadvisable to treat the fracture, not that the character of the fracture makes it inadvisable to treat the patient.

Cavernous Sinus Thrombosis.—A study of 50,000 surgical histories in the Johns Hopkins Hospital disclosed eight cases of this type. Four other cases are included in this report. The three most common causes of a thrombosis of the cavernous sinus are: marasmus, trauma and infection. The symptoms of cavernous sinus thrombosis may be divided into three groups: (1) those due to venous obstruction; (2) those due to involvement of the neighboring nerves, and (3) those due to general sepsis. Those of the first two groups are the most important and of most diagnostic value. Those of the third group are usually dependent on an associated septicemia. A history of chills and severe headache, a septic temperature and an exophthalmos that always begins on one side, but usually involves the opposite eye within twenty-four or forty-eight hours, are pathognomonic of thrombosis of the cavernous sinus. The focus of infection if found should be as thoroughly removed as possible. Only 7 per cent. of these patients recovered without operation. The number of patients that have recovered as a result of operation on the cavernous sinus, however, is less than 7 per cent. Operation was not attempted in any of the cases cited by Chisolm and Watkins, and the percentage of recovery was 8.33. The failure of surgical intervention is undoubtedly due to the fact that a basilar meningitis and a thrombosis of the neighboring venous sinuses occur, as a rule, early in the course of the disease. A lumbar puncture should always be performed, for the patient may manifest the usual symptoms and signs of meningitis and yet have a clear spinal fluid. If examination of the spinal fluid reveals the presence of a septic meningitis, mere drainage of the cavernous sinus is mainifestly inadequate. If, on the other hand, the spinal fluid is clear, the patient has a chance for recovery without operation.

Diverticulum of Duodenum.—In Moore's case a large diverticulum was found on the anterior aspect of the second portion of the duodenum. A scar of an old healed duodenal ulcer was present on the anterior wall of the first part. All symptoms seemed referable to the diverticulum. The diverticulum was amputated. This case is the fourth on record in which this was done.

Cause of Failure of Internal Bone Splints.—The most frequent cause of failure in the sixteen cases cited by Thomas and Clark was sepsis; the next in frequency was slipping of the internal bone splint.

Chronic Dilatation of Duodenum.—Crouse is of the opinion that there is, in all probability, a chronic, preexisting duodenal dilatation in all cases of acute gastroduodenal dilatation. It is cured by surgical intervention. Many patients with gastric ulcer treated by posterior, no loop, gastroenterostomy technic, should have a duodenojejunostomy performed as well.

Roentgenologic Study of Postinfluenzal Pyopneumothorax.—Four cases of postinfluenzal pyopneumothorax were studied roentgenologically by Grabfield and Squier. Their findings are recorded. These cases and roentgenograms demonstrate how completely the normal chest markings may be restored even after the presence of extensive adhesions, marked pleural thickening and pulmonary deformity. In treating cases of this type, it should be remembered that during the acute stage the effusion should not be removed, unless there are definite indications. The procedures which are subsequently employed should be as conservative as possible. The indications for the employment of these should be determined by the clinical course and by frequent roentgen-ray examinations.

Pathologic Anatomy of Tuberculosis of Kidney.—Observations made on a group of twenty-one kidneys, obtained at operation, which showed macroscopically a single small lesion at some point in the renal substance with an attendant tuberculous pyelitis are recorded by Crabtree. In some instances, the cortex was almost, if not entirely, free from gross lesions, yet in most instances there were a few small cortical tubercle tubercles to be seen overlying the gross lesion of the interior of the kidney and connected with it by lines of tuberculous infiltration. In apparently normal portions of the cortex, remote from the region of the primary focus, numerous microscopic tubercles were seen just beneath the true capsule which seem not to be connected with the pelvis by the usual fine lines of round cell and endothelial cell infiltration which is usually found where there is extension to the cortex from an underlying caseating cavity. Also in the one double kidney there was no demonstrable process in the pelvis or medullary poritions of the other half, yet the cortex showed numerous small tubercles beneath the capsule. Crabtree believes that these lesions are due to lateral extension by way of the cortical lymphatics.

Abdominal Incisions.—Quain reviews the anatomy of the abdominal wall and points out how injury of its structures may be avoided when making incisions. He prefers the median incision in most pelvic operations. The Pfannenstiel or transverse incision is sometimes preferred when the round ligaments of the uterus require surgical intervention. It is of special advantage in the presence of a very fat or short abdomen. The two recti should be sutured together to reinforce the linea alba. The anterior aponeurosis will heal most surely if the margins are overlapped one-fourth or one-half inch. Edge-to-edge approximation is not enough. Softening of the catgut and straining of the muscles favor separation from the moment the operation is completed. The side-to-side silkworm-gut sutures, usually depended on for fixation of the wound during the healing process, do not hold the wound firmly together unless they are tied so tightly that they cause injurious pressure on the tissues. A more effective method, and a method less constricting to tissues, is the introduction of a silkworm gut through the overlap of the aponeuroses in a short bite only, the two ends of the suture coming out closely together, well to the side of the wound, and being tied over a suitable button. The two aponeurotic surfaces coming in contact should be free from all intervening tissue, but for the purpose of insuring immediate blood supply to the margins

of the aponeuroses it is advisable not to loosen the undersurface of the under flap from the rectus muscle, nor the upper surface of the upper flap from the fat and subcutaneous tissues.

Boston Medical and Surgical Journal

Nov. 25, 1920, **183**, No. 22

What Should Be the Attitude of State Toward Hospital Standardization? M. F. Fallon, Worcester.—p. 617.
Some Practical Hospital Problems Encountered in an Industrial Community. E. MacD. Stanton, Schenectady, N. Y.—p. 623.
How Can Shortage of Nurses be Met? J. B. Howland, Boston.—p. 628.
Historical Note on Relationship of Digestive Disturbances and Psychoses. C. G. Cumston, Geneva, Switzerland.—p. 632.
Early Orthopedic Treatment of Infantile Paralysis. A. T. Legg, Boston.—p. 635.
New Instrument. A Four-Way Stop-Cock. G. T. Tyler, Greenville, S. C.—p. 637.

California State Journal of Medicine, San Francisco

November, 1920, **18**, No. 11

Roentgen-Ray Diagnosis and Localization of Peptic Ulcer. R. D. Carman, Rochester, Minn.—p. 377.
Nasal Plastic Surgery. H. B. Graham, San Francisco.—p. 383.
*Modern Treatment of Syphilis of Central Nervous System. H. G. Mehrtens, San Francisco.—p. 385.
Quality of Some Drug Preparations Sold in and Around Los Angeles. H. L. White and T. Watson, Los Angeles.—p. 387.

Treatment of Syphilis of Central Nervous System.—The clinical results of 1,500 treatments for syphilis of the central nervous system Mehrtens says has brought out the following facts: To get the maximum results, each case must be treated according to individual requirements—there can be no rigid routine treatment. There is no rigid routine treatment. There is no greater danger in treating syphilis of the central nervous system than there is in treating visceral syphilis when a proper technic is developed. Cerebrospinal syphilis (meningeal type) was arrested in 80 per cent. of cases; intramuscular and intravenous therapy were sufficient in about 40 per cent. of the remainder 35 per cent. were benefited by intraspinous therapy, and 15 per cent. improved somewhat but were not arrested. About 5 per cent. of cases diagnosed cerebrospinal syphilis developed paretic symptoms. Headaches cleared up in 90 per cent. of instances—generally after one or two intraspinous treatments. Tabes—early cases—nearly all did well clinically. Some lightning pains recurred from time. Late tubes showed marked improvement in about 60 per cent., but there was no evidence to show returning function of reflexes—pupillary reaction or Romberg sign. In paresis the results were poor. A few cases went into remissions, but ultimately deteriorated and had to be committeed. Several cases so diagnosed cleared up permanently, but this unusual result tended to cast doubt on the original diagnosis. Arsphenamin, from six to twelve injections of 0.6 gm. each week intravenously combined with intramuscular mercury injections and iodid by mouth was the method of treatment employed.

Georgia Medical Association Journal, Atlanta

November, 1920, **10**, No. 6

Roentgen-Ray Study of Abdominal Organs Following Oxygen Inflation of Peritoneal Cavity. G. M. Niles, Atlanta.—p. 149.
Mental and Nervous Clinic at Macon. N. P. Walker, Milledgeville.—p. 152.
Analysis of Series of Heart Lesions with Special Reference to Etiology and Treatment. R. H. Stovall, Macon.—p. 154.
Uterine and Cervical Radium Holders. C. Swanson, Atlanta.—p. 158.
Breast Tumors; Special Reference to So-Called Cystic Mastitis. C. W. Roberts, Atlanta.—p. 160.
Treatment of Lethargic Encephalitis. S. R. Roberts, Atlanta.—p. 164.
Infant Feeding for General Practitioner. W. L. Funkhouser, Atlanta. p. 167.

Indiana State Medical Association Journal, Ft. Wayne

Nov. 15, 1920, **13**, No. 11

Physician: General Practitioner. F. B. Wynn, Indianapolis.—p. 365.
Legacies of Asset and Liability. C. H. McCully, Logansport.—p. 371.
*Strychnin Poisoning from Hinkle Pills. A. M. Winklepleck, Elnora.—p. 375.
Local Indications for Tonsillectomy and Adenoidectomy. J. W. Carmack, Indianapolis.—p. 376.

Strychnin Poisoning from Hinckle's Pills.—Winklepleck's patient was a 3 year old child. It could not be determined how many tablets the child had eaten of those with which it was playing, but the symptoms were typical of strychnin poisoning. Under appropriate treatment the child recovered.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1920, **10**, No. 11

Des Moines Health Center. A. D. McKinley, Des Moines.—p. 365.
Practical Value of Cerebrospinal Fluid Examination. M. G. Wohl, Omaha.—p. 369.
Artificial Pneumothorax; Report of Cases. W. H. Ross, Waterloo.—p. 373.
Psychopathic Hospital. R. C. Doolittle, Des Moines.—p. 376.

Johns Hopkins Hospital Bulletin, Baltimore

November, 1920, **31**, No. 357

*Effect of Diphtheria Antitoxin in Preventing Lodgment and Growth of Diphtheria Bacillus in Nasal Passages of Animals. J. Gelien, W. L. Moss and C. G. Guthrie, Baltimore.—p. 381.
Diphtheria Bacillus Carriers. C. G. Guthrie, J. Gelien and W. L. Moss, Baltimore.—p. 388.
*Treatment of Neurosyphilis by Intraspinal Route; Clinical Study of Series of Cases Treated from Point of View of Increased Permeability of Meninges. A. Keidel and J. E. Moore, Baltimore.—p. 404.
*Mononuclear Leukocytosis in Reaction to Acute Infections. T. P. Sprunt and F. A. Evans, Baltimore.—p. 410.
*Case of Pneumococcus Type I Vegetative Endocarditis; Following Lobar Pneumonia. H. M. Thomas, Jr., and D. O'Hara, Boston.—p. 417.

Effect of Diphtheria Antitoxin on Diphtheria Bacillus.—The production of nasal infection or infestation of cats, rabbits and guinea-pigs with *B. diphtheriae* was quite inconstant even when the organisms were introduced directly into the nose. A somewhat higher percentage of animals showed positive cultures among those directly inoculated than among those merely exposed to a "carrier" (66 and 55 per cent.). A much greater discrepancy would not have been surprising. Cats and rabbits became infected with about the same frequency and the indicence of positive cultures was also much the same. Among the guinea-pigs, 66 per cent. developed positive cultures and 26 per cent. of the total number of cultures taken showed Klebs-Loeffler bacilli. The duration of infection was usually quite short but may have been variable in this respect, as some animals still harbored diphtheria organisms at the end of the experiments. The health of the animals was apparently unaffected by the mere presence of the bacilli in the nose. The occurrence and duration of infection were independent of the virulence of the strain of organisms used for inoculation and were wholly unaffected by the previous administration of antitoxin.

Diphtheria Bacillus Carriers.—Guthrie and his associates claim that the diphtheria bacilli present in a majority of healthy carriers are avirulent. Avirulent bacilli cannot produce diphtheria. There is no proof that avirulent diphtheria bacilli can acquire virulence. Hence, the carriers of avirulent diphtheria bacilli do not constitute a menace to any one in particular or the community as a whole, and any interference with their liberties on the grounds of their being carriers is unwarranted and not justifiable. The carrier of virulent diphtheria bacilli occupies quite a different position from that of the carrier of avirulent bacilli. The authors think that the danger from the former has perhaps been overestimated we recognize the fact that diphtheria bacilli derived from him may give rise to the disease in susceptible persons.

Intraspinal Medication in Neurosyphilis.—Keidel and Moore claim that the mode of action of intraspinal medication does not depend on increased permeability of the meninges and that aseptic meningitis produced by intraspinal injection of irritants may prove an untoward rather than a beneficial factor in the treatment of neurosyphilis.

Mononuclear Leukocytosis in Acute Infections.—Six cases exhibiting a mononuclear leukocytosis in reaction to acute infection are recorded by Sprunt and Evans. The symptoms and signs in all were so nearly the same that they apparently constitute a distinct clinical syndrome. Each case ran a febrile course with moderately severe prostration. In four there were evidences of a tonsillitis or other infection of the upper respiratory tract, and a moderate general glandular enlargement. Four of the cases had, in addition, a palpable spleen. The total leukocyte count was normal at first, but later became moderately increased. The differential formula showed a slight increase in the cells of the large mononuclear-transitional group and the presence of many pathologic lymphoid forms. Later there was a leukocytosis which was largely due to an increase in lymphoid cells among which

were many pathologic forms. The prognosis in these cases is good.

Pneumococcus Endocarditis.—An unusual case of Type I pneumococcus endocarditis, namtly, of the tricuspid valve, is reported by Thomas and O'Hara. There is, some cause for believing that pneumococcus endocarditis is usually caused by the Type I pneumococcus. This case suggests the advisability of frequent and early blood cultures during the convalescence from pneumonia whenever a rise in temperature occurs.

Journal of Laboratory and Clinical Medicine, St. Louis

November, 1920, **6**, No. 2

Hemostatic Agents and Spontaneous Changes in Coagulation Time Following Hemorrhage. P. J. Hanzlik, Cleveland.—p. 59.
*Pharmacologic Study of Benzyl Benzoate. E. C. Mason and C. E. Pieck, Cincinnati.—p. 62.
Epidemic of Influenza in Army Post of A. E. F. in France. A. M. Chesney and F. W. Snow.—p. 78.
*Effect of Amino Acids on Growth of Tubercle Bacilli. P. Masucci, Glenolden, Pa.—p. 96.
Variations in Wassermann Reaction. R. A. Kilduffe, Pittsburgh.—p. 98.
Apparatus for Staining and Drying Slides. F. H. Lamb, Davenport, Ia.—p. 101.
*Blood Changes in Case of Hemophilia After Transfusion. H. A. Bulger, Boston.—p. 102.
Simple Method of Isolating Bacteria from Pathologic Material. H. C. Klix, Detroit.—p. 104.

Pharmacology of Benzyl Benzoate.—Mason and Pieck have studied the mechanism by which various conditions are relieved by benzyl benzoate and endeavored to ascertain the concentration of the drug in the blood necessary to produce the desired results. The results of their study are given in detail.

Effect of Amino Acids on Tubercle Bacillus Growth.—Glycerin bouillon containing 1.7 per cent. "Difco" peptone and 0.3 per cent. aminoids has about 30 per cent. more amino acids and 50 per cent. more phosphorus than bouillon made with 2 per cent. "Difco" peptone alone. Masucci found that the amino-acids hasten the growth of *B. tuberculosis* by furnishing the necessary form of nitrogenous matter for the building of the more complex bacterial protein. The increased amount of phosphorus probably increases the quantity of growth as that latter element is an important constituent of nucleo and lecithin protein substances found abundantly in the tubercle bacilli.

Blood Changes in Hemophilia After Transfusion.—In Bulger's case the day following transfusion the blood was practically the same as the control, but the coagulation time and prothrombin time were gradually lengthened. One month later they were still less than before transfusion. There was no marked change in the blood found to correspond to the slight bleeding into the joints found on the elevtnth day.

Kansas Medical Society Journal, Topeka

November, 1920, **20**, No. 11

Profession and Public; Plea for Closer Relationship. H. C. Embry, Hoisington.—p. 317.
Visceral Syphilis. H. E. Marchbanks, Pittsburg.—p. 320.
Surgical Infections of Kidney. R. W. James, Winfield.—p. 323.
Medicine's Economic Future. T. Bachmeister, Chicago.—p. 326.
Reminiscences. C. C. Goddard, Leavenworth.—p. 329.
Indirect Paracentesis for Abdominal Dropsy. V. E. Lawrence, Ottawa.—p. 332.

Medical Record, New York

Nov. 27, 1920, **98**, No. 22

Roentgen-Ray Findings with Delineator in Cases of Pylorospasm. M. Einhorn and T. Scholz, New York.—p. 883.
Diagnostic Methods in Exophthalmic Goiter; Special Reference to Quinin. I. Bram, Philadelphia.—p. 887.
Practice of Medicine as a Vocation. W. J. Mallory, Washington, D. C.—p. 891.
*Treatment of Alopecia Areata with Quartz Lamps (Kromayer and Alpine). H. Fox, New York.—p. 895.
Early Diagnosis of Gallbladder Lesions. R. H. Fowler, Brooklyn.—p. 898.
Applied Anatomy of Pelvic Bowel. C. J. Drueck, Chicago.—p. 900.

Quartz Lamps in Treatment of Alopecia Areata.—Fox claims that the quartz lamps (Kromayer and Alpine) are cleanly and convenient agents for the treatment of alopecia areata. The results in his series of fifty cases, though not brilliant, were at least satisfactory. More than half of the patients were followed to complete recovery, while in 78 per cent. of the cases the new hair had at least begun to grow. The results were gratifying because Fox had never previously succeeded in following any considerable number of cases when using other methods of treatment. The patients would become discouraged too quickly and continue the usual habit of such cases of frequently changing both remedy and physician.

New Jersey Medical Society Journal, Orange

November, 1920, **17**, No. 11

Heart Irregularities; Their Clinical Recognition and Interpretation. C. E. Teeter, Newark.—p. 365.
Obesity. F. C. Horsford, Newark.—p. 375.
Specialist and Family Physician. L. Emerson, Orange.—p. 384.

New Orleans Medical and Surgical Journal

November, 1920, **73**, No. 5

Importance of Early Diagnosis of Rectal Diseases. A. G. Heath, Shreveport.—p. 162.
Science and Practice in Fight Against Malaria. B. Gosio, Rome.—p. 168.
Notes on Tropical Diseases. L. Ambrose, New Orleans.—p. 178.

New York Medical Journal

Nov. 27, 1920, **112**, No. 22

Theory of Pneuma in Aristotle. J. Wright, Pleasantville, N. Y.—p. 833.
Standardized Roentgen Ray in Treatment of Skin Diseases. H. Fox, New York.—p. 837.
Physical Diagnosis Versus Roentgen Ray in Diseases of Lungs. G. W. Norris, Philadelphia.—p. 841.
Roentgenotherapy. J. T. Stevens, Montclair, N. J.—p. 843.
Foods and Races. J. S. Lankford, San Antonio.—p. 845.
Sterility, Sex Stimulation and Endocrines. T. W. Edgar, New York.—p. 848.
Christian Science and Sex. T. Schroeder, Cos Cob, Conn.—p. 851.
Underlying Factors in Good Posture. C. W. Crampton, Battle Creek, Mich.—p. 852.
Cardiac Manifestations in Influenza. C. G. Cumston, Geneva, Switzerland.—p. 857.

New York State Journal of Medicine, New York

November, 1920, **20**, No. 11

Delayed Emptying of Stomach in Infants and Children. C. G. Kerley, New York.—p. 345.
*Mortality Factors of Lobar Pneumonia in Children. LeG. Kerr, Brooklyn.—p. 348.
Intranasal Drainage of Frontal Sinus Through Natural Opening. M. Unger, New York.—p. 351.
Systemic Infections in Relation to Acute Middle Ear Diseases. S. J. Kopetzky, New York.—p. 353.
Development of Cosmetic Rhinoplasty. S. Oppenheimer, New York.—p. 355.
Application of Methods Developed During War to Treatment of Fractures in Civil Life. J. A. Blake, New York.—p. 357.
Health Center Bill. E. MacD. Stanton, Schenectady.—p. 359.
History of Medical Practice in Oswego County. E. J. Drury, Fulton.—p. 362.

Mortality Factors of Pneumonia in Children.—Acute gastric dilatation has occurred in more or less degree in 28 per cent. of all lobar pneumonia cases in children seen by Kerr and in one out of every four he says it becomes a positive danger to the child's life. Undoubtedly, the acute toxemia causes a paresis of the gastric musculature or paralyzes the motor fibers of the vagi and the cervical sympathetic supplying the stomach. It may be further excited by overloading the stomach with liquids when the nervous energy of the body is at a low ebb from the toxemia but is primarily due to the toxemia. The first symptoms are usually those of restlessness, accompanied by an increased thirst and vomiting. Acute epigastric pain may or may not be in evidence. Other symptoms are increased respiration, cyanosis and exhaustion. The objective findings are characteristic: visible and palpable tumor in the upper abdomen. Immediately after vomiting this may be reduced. Usually, after a very few hours, the pinched features and the objective evidence of circulatory shock are marked. Treatment must be prompt and adapted to the immediate condition of the stomach. If percussion reveals much fluid, the foot of the bed should be elevated from 12 to 18 inches, and the left anterolateral abdominal position assumed. The next essential is efficient lavage and then the absolute withholding of everything by mouth for at least twelve hours and often longer. To limit or present a starvation acidosis a solution of sodium bicarbonate with glucose is given by

proctoclysis. For an acute dilatation, firm pressure is made for several seconds with the instrument placed across the spine in the interspaces between the third and fifth thoracic vertebra. This causes an explosive eructation of gases. Another procedure which may be desirable, but not absolutely essential, is the administration by hypodermic of small doses of morphin.

Northwest Medicine, Seattle

November, 1920, **19**, No. 11

*Analysis of End Results of Treated Chronic Septic Myositis, Neuritis and Arthritis Cases. N. W. Jones, Portland.—p. 279.
*Treatment of Septic Arthritis of Knee Joint. E. O. Jones, Seattle.—p. 286.

End Results of Treatment in Chronic Rheumatism.—An analysis of the end results of 138 cases belonging to the group of so-called chronic rheumatisms is made by Jones. These cases have been studied over variable periods of time, in many as long as three, four or five years since treatment was instituted. The cases are grouped: chronic septic myositis and neuritis treated with carefully conducted cultural studies and those without, and chronic septic arthritis treated with and without such studies. Seventy-one per cent. positive muscle and joint lesions were found in the arthritis group, and 100 per cent. positive muscle and tendon sheath lesions in the myositis-neuritis group. No nerve lesions were found. The treatment consisted in the radical removal of all foci of infection, and the use of subsidiary measures: (1) mechanical and hydrotherapeutic, (2) autogenous vaccines, (3) stock vaccines, (4) foreign proteins, (5) radium, (6) dietetic and (7) climatic. Autogenous vaccines gave uniformly better results than did stock vaccines, in fact, better results were obtained from the autogenous vaccines than from all of the other measures combined.

Treatment of Septic Arthritis.—Four cases of metastatic arthritis reported by Jones were treated by aspiration with subsequent injection of liquor formaldehydi and glycerin. Arthritis cases following penetrating wounds of the joint were all treated by long lateral incisions, placed as far back as possible, extending from the head of the tibia up to the upper limit of the subcrural pouch which was freely opened. Two cases of septic arthritis with slight injury of the condyles of the fermur were treated with active mobilization. The routine treatment for cases of this group consisted in the long lateral incisions, the removal of all fragments of necrotic bone, immobilization of the leg in a Thomas splint and usually the application of moderate extension. In suitable cases the Willems method of active mobilization was found to be a most useful procedure.

Public Health Journal, Toronto

November, 1920, **11**, No. 11

*Analysis of Diphtheria Deaths in Ontario. J. G. Fitzgerald, Toronto.—p. 485.
Conservation of Child Life. A. C. Jost, Guysboro, N. S.—p. 503.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman.—p. 513.
Meaning of Poverty. F. Almy, Buffalo, N. Y.—p. 516.

Study of Diphtheria in Ontario.—A statistical study of deaths due to diphtheria in Ontario was made by Fitzgerald. Despite a steady increase in the population from 1880 to 1918, the total number of diphtheria deaths fell from 1,251 in 1880 to 335 in 1918. The death rate among cases treated in hospital was very much lower, as a rule, than among those not admitted to hospital. The most important single factor responsible for the continuance of diphtheria deaths is the neglect of early treatment. Failure in this respect is usually due to delay in calling a physician in cases of sore throat in little children. Every sore throat is potentially dangerous. Only the physician can decide which cases are serious and which are unimportant. Education of the public in this matter is a matter of vital moment. Physicians are advised to administer antitoxin in single rather than in divided doses. Attention is also directed to the desirability of administering at least 5,000 units of antitoxin intravenously in late and severely toxic cases, as soon as they are seen by the physician. In such cases the remainder of the dose which the physician has decided to give, may be injected subcutaneously or intramuscularly. Absorption in ten times as rapid after intravenous, and four times as rapid after intramuscular as after subcutaneous injection. The statement of Park that "the greater the quantity of antitoxin in the blood the more rapid will an appreciable amount pass to the tissues," should be kept in mind. This may decide the issue of life or death in cases of diphtheria where treatment has not been undertaken early.

Surgery, Gynecology and Obstetrics, Chicago

November, 1920, **31**, No. 5

*Relation of Islets of Langerhans to Diabetes; Reference to Cases of Pancreatic Lithiasis. M. Barron, Minneapolis.—p. 437.
*Gunshot Wounds of Brain with Retained Missiles. C. Bagley, Jr.—p. 449.
*Reduction of Old Dislocations of Hip by Open Incision. J. J. Buchanan.—p. 462.
Cancer of Rectum; Analysis of 53 Cases. E. A. Wells, Hartford, Conn.—p. 472.
*Renal Hematuria Symptom of Prenephritic Condition of Kidneys. E. L. Young, Jr.—p. 478.
Dissecting Interstitial Abscess of Cecal Wall. F. Hagler, St. Louis.—p. 485.
Benign Tumors of Labia; Six Cases. W. H. Condit, Minneapolis.—p. 487.
*Cholecystogastrostomy. C. S. White, Washington, D. C.—p. 493.
*Function of Corpus Luteum. E. H. Ochsner, Chicago.—p. 496.
Pregnancy in Rudimentary Horn of Uterus. O. P. Humpstone, Brooklyn.—p. 501.
*Sarcoma of Stomach; Report of a Case. W. D. Haggard, Nashville, Tenn.—p. 505.
Study of Persistent Bone Sinuses. C. W. Peabody.—p. 512.
Abdominal Pregnancy with Fetus Alive at Time of Operation. J. M. Maury, Memphis, Tenn.—p. 523.
*New Operation for Prolapse of Rectum in Women. H. M. Richter, Chicago.—p. 527.
*Value of Position in Operative Treatment of Inguinal Hernia. H. H. M. Lyle, New York.—p. 529.
Inflation of Colon as Aid in Roentgen-Ray Examination. H. B. Philips, New York.—p. 531.
Description of Suprapubic Prostatic Retractor. R. E. Farr, Minneapolis.—p. 532.
Treatment of Procidentia in Nulliparous. G. E. Shoemaker, Philadelphia.—p. 534.

Islets of Langerhans and Diabetes.—Barron states that his study bears out the conclusions that the islets of Langerhans secret a hormone directly into the lymph or blood streams (internal secretion), which has a controlling power over carbohydrate metabolism. The principal clinical findings in cases of pancreatic lithiasis are colic-like epigastric pains often associated with temporary glycosuria, steatorrhea, alimentary glycosuria, incomplete digestion of meat fibers as revealed by the persistence of the nuclei in muscle fibers in the feces, and, occasionally, the presence of whitish or grayish pancreatic stones in the feces; the late stages are often accompanied by diabetes mellitus. Operations on the pancreatic duct are often successful. The danger of fat necrosis as a result of the escape of pancreatic fluid appears to be negligible.

Gunshot Wounds of Brain.—In a series of 192 patients with head wounds, which, except for a few accidents, were war injuries, forty-two had metallic foreign bodies intra or extracranial; in thirty-three cases the metal was superficial or in small particles, so that only nine had retained metal of sufficient size and at a sufficient depth to demand serious consideration. These cases with an additional civilian with a retained pistol bullet, form the basis of Bagley's paper.

Reduction of Hip Dislocations by Open Operation.—In traumatic hip dislocations reduction by manipulation is rarely successful after four weeks Buchanan says, owing to formation of connective tissue, which fills the acetabulum and binds down the head and neck. Reduction by open incision is to be preferred in nearly all cases of old hip luxations and with modern methods is attended with but little danger. Preliminary traction by Buck's extension is of advantage. The actual replacement of the head, after the acetabulum has been emptied and the head and neck released, is best accomplished by manipulation or the use of levers with manual and body traction. The result is often ideal and, in the fifty cases reported by Buchanan has been good in 80 per cent .

Renal Hematuria a Prenephritic Symptom.—From an analysis of thirty-three cases Young concludes that it is reasonable to believe that in a majority of these cases there is an early unrecognized nephritis or a prenephritic condition which can be, and probably often is, the cause of hematuria, and that this condition may or may not go on to a progressive damage of

the kidney, depending on conditions which we do not as yet understand. In certain of these cases the primary focus of damage can be recognized, and when eliminated will prevent the later development of the disease.

Cholecystogastrostomy.—The operation of cholecystogastrostomy White says is indicated in (1) an irremediable obstruction of the common duct or division of the duct which cannot be successfully sutured; (2) for long continued drainage in infective biliary cirrhosis it is superior to cholecystostomy in that nutrition is maintained. It is not a difficult operation, being easier and safer to perform than an anastomosis between the gallbladder and the small or large intestine. There is no danger of an ascending infection. The presence of bile in the stomach, while unphysiologic in a degree, is consistent with good digestion, and offers no argument against the operation. The suture method of anastomosis is the only one to be employed.

Function of Corpus Luteum.—The suggestion is made by Ochsner that an unabsorbed false corpus luteum prevents ovulation and is a common cause of sterility, and that the expression or excision of such a false corpus luteum invariably brings on menstruation. The excision or rupture of a true corpus luteum invariably results in interruption of pregnancy, at least during the early months of pregnancy, and it may be regarded as a common cause of abortion. An injury to either the true or false corpus luteum may simulate ruptured extra-uterine pregnancy.

Sarcoma of Stomach.—Haggard reports one case and analyzes 107 cases in which an operation was performed.

Operation for Prolapse of Rectum in Women.—The essential features of the operation devised by Richter are: first, the suspension of the rectum by passing the board ligament behind it; second, the fixation of the rectum to the uterus and of the uterus outside the abdominal fascia. The operation is limited to women in whom the broad ligaments and uterus can be utilized for the suspension, and must either be performed after the childbearing period is passed or where sterilization is permissible.

Value of Position Following Herniotomy.—In order to secure sufficient relaxation of the inguinal region during the period of healing, Lyle places a pillow under the thigh, and elevates the shoulders, for at least seven days.

Texas State Journal of Medicine, Fort Worth

November, 1920, **16**, No. 7

Need of Systematized Postgraduate Teaching of Ophthalmology and Oto-Laryngology. J. H. Foster, Houston.—p. 285.
Extirpation of Lacrimal Sac in Traumatic Dacryocystitis. J. M. Wheeler, New York.—p. 286.
Nonoperative Management of Cataract Cases. J. O. McReynolds, Dallas.—p. 289.
Operative and Nonoperative Treatment of Squint. E. M. Sykes, San Antonio.—p. 291.
*Case of Intra-ocular Cysticercus. J. A. Mullen, Houston.—p. 293.
Trachoma. H. L. Hilgartner, Austin.—p. 295.
Transplantation of Extra-Abdominal Fat for Relief of Postoperative Adhesions. C. M. Rosser, Dallas.—p. 298.
Heart Murmurs. L. Rice, Galveston.—p. 301.
Doctor's Duty to His Fellow Practitioner. J. S. McCelvey, Temple.—p. 303.
Prohibition and Practice of Medicine. A. W. Acheson, Denison.—p. 305.

Intra-Ocular Cysticercus.—Five weeks after an attack of acute enteritis which had lasted four weeks Mullen's patient became conscious of a decided blur in the vision of the left eye, without any pain or distress. The external appearance of the eye was perfectly normal. Vision reduced to easy finger counting. While the examination was in progress, there floated through the vitreous, across the pupillary space, a partially transparent body, shaped like a sausage balloon, slightly narrowed at the temporal end. The large, rounded end was directed toward the nasal side of the fundus and contained numerous dots or pigmentations, indicating the head of the worm. The bladder worm always entered the field of vision from left to right and with the enlarged or butt end in the lead. It did not manifest any individual movements and its periphery was smooth and devoid of indentations. The patient left Mullen's observation, and further study of the case was rendered impossible.

West Virginia Medical Journal, Huntington

November, 1920, **15**, No. 5

Foreign Bodies in Air Passages and Esophagus. T. W. Moore, Huntington.—p. 161.
Diagnosis and Treatment of Early Syphilis. W. S Robertson, Charleston.—p. 164.
Congenital Absence of Vagina; Report of Two Cases with Restoration by Baldwin Method. W. H. St. Clair, Bluefield.—p. 170.
Essential Renal Haematuria; Report of Two Cases. O. D. Barker, Parkersburg.—p. 174.
After Care of Patient and His Lenses. C. A. Campbell, Wheeling.—p. 176.
Present Status for Venereal Disease Control in West Virginia. F. F. Farnsworth, Charleston.—p. 178.

Wisconsin Medical Journal, Milwaukee

November, 1920, **19**, No. 6

Clinical Aspects of Pneumonia. L. F. Jermain, Milwaukee.—p. 275.
Abdominal Symptoms in Pneumonia. F. G. Connell, Oshkosh.—p. 279.
Studies in Typhoid Fever. E. Henes, Jr., Milwaukee.—p. 282.
Reflexes and Their Diagnostic Importance. A. W. Sivyer, Milwaukee.—p. 290.
Should State Control and Care For All Its Feebleminded and Epileptics? C. Gorst, Madison.—p. 295.
Subluxations of Crystalline Lenses and Their Treatment. G. N. Brazeau, Milwaukee.—p. 302.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

October, 1920, **25**, No. 5

History of Electrotherapy. H. A. Colwell.—p. 129.
Radiography of Gallbladder. N. MacLeod.—p. 141.

British Journal of Experimental Pathology, London

October, 1920, **1**, No. 5

Value of Simultaneous Testing for Wassermann Reaction with Two Different Antigens and the Ice Box Method. T. J. Mackie and C. C. Rowland.—p. 219.
*Variations in Benzidine Peroxidase Reaction Depending on Fixative, Physiologic Activity and Type of Animal. M. L. Menten.—p. 225.
*Researches on Dysentery. F. W. Twort.—p. 237.
*Respiratory Exchange of Surviving Mouse Tissues, Normal and Neoplastic. R. R. G. Russell and W. H. Woglom.—p. 244.
*Transmission of Experimental Lethargic Encephalitis in Monkeys and Rabbits; Spontaneous Infection in Monkey. J. McIntosh.—p. 257.

Variations in Benzidin Peroxidase Reactions.—The Graham benzidin peroxidase reagent, consisting of a 0.5 per cent. solution of benzidin in 75 per cent. alcohol, plus 0.2 per cent. hydrogen peroxid, produces a yellow brown color in the granules of myelogenous cells in human blood, and, Menten says, is diagnostic for man. The polymorphonuclear leukocytes of lower animals studied differ from those of human blood in their reaction to the Graham reagent in that only a small percentage of them develop the characteristic yellow color. These positively reacting cells are probably eosinophilic. In a 0.5 per cent. solution of benzidin in 75 per cent. alcohol free from hydrogen peroxid practically all of the myelogenous cells of the guinea-pig, dog, white mouse, white rat and rabbit give the characteristic colored granular reaction. Addition of hydrogen peroxid to this solution tends to inhibit the development of the yellow color, which disappears from all except one or two cells when the concentration of the peroxid is increased to 1 per cent. By varying the concentrations of the alcohols in the Graham reagent a series of colors ranging from deep brown through the yellows and the yellow greens to blue may be obtained in granules of human pus aspirated from empyemic cavities. As these samples of pus age, the color reactions are lost. Pus in which the leukocytes become more degenerated give a negative reaction. The blue reaction of pus cells may be duplicated by exposing blood films to weak concentrations of acid, previous to treatment with benzidin solutions.

Dysentery Bacilli.—Twort claims that three types of special forms can be isolated from dysentery and allied bacilli. Type A shows moderately thick but long bacilli, which may twist like a spirochete. Type B shows long thick rods; some swollen in the middle or at one end, and these may break open and set free granules. The bacilli are associated with round forms and many free granules. Type C bacilli are like type B, but shorter. There are many granules and round

forms, also thick branching units. In older cultures most of the units are globular, and the protoplasm may collect as a semilunar mass round the circumference. A filter passing dissolving material may be present in cultures of dysentery bacilli, etc., which breaks down the bacilli into granules. The special types A, B and C are produced by normal bacilli, but some smaller units are always present. The special forms are probably not stages in a true life cycle, as the normal type is not produced in rotation, and it is doubtful if they are mutations. Special types may be produced for performing special work, and types in "pure culture" may be likened to bees in a swarm. They are possibly of importance in connection with incubation period, successful infection, and production of immunity. Sexual multiplication is not proved, but may exist in normal cultures.

Respiratory Exchange of Living Tissues.—Respiratory quotients were obtained by Russell and Woglam for surviving normal and tumor tissues of the mouse by suspending emulsions in alveolar air in the Barcroft blood-gas apparatus. The results agreed very closely in successive experiments with each normal tissue. Greater variability was found with tumors. The tentative conclusion is drawn that the more rapidly growing, undifferentiated tumors draw their energy from carbohydrate, the more slowly growing from fats.

Experimental Transmission of Lethargic Encephalitis.—The successful transmission in series of experimental lethargic encephalitis to monkeys and rabbits, McIntosh says, has completed the experimental proof necessary to show that the disease is caused by a living virus. One spontaneous case is recorded as additional proof.

Dublin Journal of Medical Science

November, 1920, **4,** No. 9

*Case of Unusual Thoracic Injury. W. Doolin.—p. 409.
*Case of Subclavian Aneurysm Treated by Distal Ligation. W. Pearson.—p. 413.
*Case of Postural Hoarseness. J. S. Johnson.—p. 416.

Unusual Thoracic Injury.—A relatively trivial rib fracture produced by direct violence to the lower right side of the chest caused a tear of the lower lobe of the left lung. The lung became fixed to the diaphragm whereby a protective "glissade" of the lung was inhibited. There was complete absence of symptoms of a left sided intrathoracic injury during the first twelve hours of his illness. As a physical examination of the dorsum could not be carried out satisfactorily our diagnostic evidence at this stage was obviously incomplete. There was also complete absence of any hemoptysis during the course of the patient's illness. A postmortem examination of the thoracic cavity disclosed an extensive hemothorax of the left pleural cavity; nearly 1,500 c.c. of fluid blood were present, displacing the heart up into the right chest. The right pleural sac was intact; the base of the lower lobe of the right lung was congested; there was an incomplete (greenstick) fracture of the seventh right rib, with slight extrapleural ecchymosis.

Distal Ligation of Subclavian Aneurysm.—Pearson exposed the first stage of the axillary artery through an incision between the deltoid and pectoralis major muscles, no fibers being divided. The artery was secured as high as possible behind the subclavius muscle by two silk ligatures placed one-third inch apart; the upper ligature only occluded the lumen of the vessel, the lower was tied as tightly as possible. The vessel wall appeared to be healthy in this area, though in such close proximity to the aneurysm. The operation proved exceedingly easy and bloodless. The circulation in the limb remained quite satisfactory, and twenty-four hours later there was no pulsation nor murmur in the aneurysm. The further progress of the case was equally good. Sixteen weeks after operation there was no swelling or pulsation in the subclavian region, the circulation in the limb was good, and the radial pulse was only slightly smaller than on the left side. There was no pain, but the patient complained of slight "feelings of numbness" at the wrist, and his grip was still weak. Cubsequent reports indicate that the cure was permanent.

Postural Hoarseness.—Johnson's patient presented marked huskiness when his head and neck were strongly rotated to the left; in other positions the huskiness was much less. Nothing abnormal was found in the mouth or pharynx. Examination by laryngeal mirror, with head centrally placed, showed a slight degree of laryngitis, probably due to excessive use of cigarets. The man had been a heavy smoker for years. The vocal cords moved well and apparently to their full extent.

Edinburgh Medical Journal

November, 1920, **25,** No. 5

Stumps After Amputation in Relation to Artificial Limbs. C. W. Cathcart.—p. 281.
Anencephalic Syndrome in Its Relation to Apituitarism. F. J. Browne.—p. 296.
Acute Appendicitis and Acute Appendicular Obstruction. D. P. D. Wilkie.—p. 308.
Case of Pellagra. R. C. Low and H. Yellowlees.—p. 315.
Goiter and Exophthalmic Goiter. A. Goodall.—p. 317.

Glasgow Medical Journal

November, 1920, **12,** No. 5

Defects of Medical Practice, Education and Research. J. MacKenzie. p. 257.
Basal Ganglia; Their Functions and Diseases. W. K. Hunter.—p. 277.

Journal of Tropical Medicine and Hygiene, London

Nov. 1, 1920, **23,** No. 21

*Preservation of Antiscorbutic Properties of Cabbage by Drying. A. Holst and T. Frölich.—p. 261.
Roentgen-Ray Motor Ambulance Wagon for Use at Home and in Tropical Countries. J. Cantlie.—p. 264.

Antiscorbutic Value of Dried Cabbage.—Holst and Frölich state that (1) thin slices of cabage which are dried for one week in an incubator at 37 C., and thereupon at the same temperature by means of phosphorus pentoxid, show pronounced antiscorbutic properties when kept at 37 C. for from eighteen to twenty-six months in vacuum bottles. (2) The same cabbage loses almost all of these properties when not treated with phosphorus pentoxid but kept for eighteen months at 37 C. in closed vessels with calcium chlorid. (3) If treated as under (2) the cabbage keeps its properties much better at + 4 to + 10 to 12 C. (4) The results are better than mentioned under (2), but not so good as under (3), when the cabbage is kept at + 4 degrees in closed vessels without any drying remedies.

Lancet, London

Nov. 20, 1920, **2,** No. 21

*Isolation Hospital 'n General Scheme of Hospital Provision. A. K. Chalmers.—p. 1037.
*Determination of Basal Metabolic Rate; Its Value in Diseases of Thyroid. C. M. Wilson and D. Wilson.—p. 1042.
Diagnosis of Bilharziasis. F. G. Cawston.—p. 1045.
Hidden Sepsis. S. W. Robertson.—p. 1046.
Operative Treatment of Umbilical and Ventral Hernia. R. Warren.—p. 1048.
Three Gastric Cases. R. P. Rowlands.—p. 1050.
Diabetes Mellitus Treated Successfully by Novarsenobenzol. F. J. W. Porter.—p. 1051.
Cesarean Section for Eclampsia: Followed by Pyosalpinx. R. L. Ley.—p. 1051.

Isolation Hospital.—Circumstances, Chalmers states, have compelled the displacement of epidemic hospitals from proximity to the teaching schools, and tended to restrict their functions to isolation and treatment. The increasing variety of diseases already being treated in them makes the development of clinical research a necessary addition to these. In the interest alike of the community, the state, and the training of future practitioners of medicine, it seems desirable to contemplate a time when the epidemic hospital will become an institute for research applied toward the elucidation of the problems with which infectious disease is surrounded.

Basal Metabolism in Thyroid Disease.—The Wilsons show that basal metabolic rate determinations have been found amply to justify the time spent on them in cases of impairment of function of the thyroid. They mark off toxic from nontoxic goiter, establish or refute suspicions of hypothyroidism, and furnish a graphic record of the results that follow the treatment of these conditions, so that the selection of the line of treatment becomes less capricious and comes to rest on exact methods. Moreover, some of observations suggest that these determinations will be found to have an altogether

wider and more important application in general metabolic disorders, particularly where the balance of function between the different glands of internal secretion is impaired.

Practitioner, London

November, 1920, **105**, No. 5

Symptoms and Treatment of Raised Blood Pressure. R. D. Powell.—p. 309.
Orthopedic Surgery. A. H. Tubby.—p. 325.
Removal of Adenoids in Infancy. H. Tod.—p. 335.
Recent Work on Nervous Diseases. H. C. Thomson.—p. 340.
Renal Complications of Acute Lacunar Tonsillitis. H. L. Cronk.—p. 351.
Colloidal Therapy and the Blood Serum. W. E. Boyd.—p. 366.
Dislocations. W. Paulson.—p. 374.
Cancer—A Theory. V. G. Webb.—p. 378.

South African Medical Record, Cape Town

Oct. 9, 1920, **18**, No. 19

Surgery; Good and Bad. C. F. M. Saint.—p. 362.
Excision of Gasserian Ganglion: Three Cases; Injections with Alcohol. C. C. Elliott.—p. 368.

Oct. 23, 1920, **18**, No. 20

Medicine Past and Present. J. Bruce-Bays.—p. 382.
Specific Therapy in Tuberculosis; Preparations of Bruschettini. D. P. Marais.—p. 390.

Annales de Médecine, Paris

August, 1920, **8**, No. 2

*Cholesterinemia. A. Chauffard, G. Laroche and A. Grigaut.—p. 69.
*Epinephrin in Vomiting of Pregnancy. F. Rathery and F. Bordet.—p. 92.
*The Nuclei Test of Pancreas Functioning. M. Labbé.—p. 101.
*The Corpus Striatum. J. Lhermitte.—p. 116.

Cholesterinemia.—Chauffard and his co-workers comment on the great increase in the cholesterin content of the blood after a meal containing fat, the increase being far beyond the amount of cholesterin ingested in the food, which suggests an intra-organic synthesis of cholesterin from the fat ingested. The high cholesterin content of the blood during the first three and the last three months of pregnancy has been confirmed by their tests. In thousands of pathologic cases they noted a drop during the febrile stage of acute infections and a high rise after defervescence in the moderate cases but never in the very mild or very severe cases. These and other data cited apparently indicate that cholesterin has an important antitoxic action and presides in some manner over the production of antibodies. Their research demonstrated further an enormous hypercholesterinemia in chronic nephritis; this may differentiate renal from cardiac edema. It does not parallel any of the symptoms of the nephritis, but there is always an abnormally large cholesterin content in the suprarenals in chronic nephritis of all forms. In sixteen diabetics only one presented much hypercholesterinemia, but in jaundice the hypercholesterinemia reaches high figures when the jaundice is from retention of elements of bile. It is within normal range in hemolytic jaundice. The highest figures for cholesterinemia were found in the cases of xanthelasma and in cholelithiasis, even in the absence of jaundice. They remark in conclusion that the decline in the cholesterin content of the blood in diabetes during a course of treatment with the waters at Vichy is a pregnant fact.

Epinephrin in Treatment of Vomiting of Pregnancy.—Rathery and Bordet report four cases of menacing uncontrollable vomiting in women at the second or third month of their pregnancy. Suprarenal insufficiency was evidently the main factor, as under epinephrin treatment their recovery was an actual resurrection in one or two days. The blood pressure was not altered. The epinephrin seemed to exert an antitoxic action, modifying the nervous system and the nutrition. It was given by various routes once a day, a total of from 4 to 8 mg. in the course of from four to seven days.

Diagnosis of Insufficiency of the Pancreas.—Labbé applied the Schmidt nuclei test in 117 cases of various pathologic conditions in the digestive apparatus, and devotes eight pages to tabulation of the findings. In thirty-seven cases the necropsy findings were compared with the results of the tests. His verdict is favorable for the reliability of the test provided the bag containing the pieces of meat is not passed along too rapidly before the nuclei can be digested. A delay of twenty-six hours is indispensable; under these conditions the findings harmonize with those of chemical examination of the stools. They not only throw light on pancreas functioning but they show the frequent participation of the pancreas in stomach, liver and bowel disease.

Symptoms from Lesions in the Corpus Striatum.—Lhermitte reviews and criticizes the literature on the syndromes for which the corpus striatum seems to be exclusively or partially responsible.

Archives des Maladies de l'Appareil Digestif, Paris

September, 1920, **10**, No. 10

*Dextrocardia from Megacolon. P. Carnot and G. Friedel.—p. 577.
Morbid Inspection of Tongue: Glossomania. G. Linossier.—p. 591.
*Pathogenesis of Membranous Pericolitis. G. Bolognesi.—p. 595.
Measurement of Pressure in Large Intestine and Its Clinical Value. E. Joltrain, P. Baufle and R. Coope.—p. 618.

Dextrocardia from Megacolon.—In the case reported by Carnot and Friedel, the enlargement of the intestine at the left flexure of the colon had pushed the heart over to the right side and displaced also the stomach, spleen and liver. The megacolon was resected, and the displaced organs slid back into place, but this induced such disturbance in the circulation that the man of 55 succumbed to a fatal syncope the next day. The case teaches the necessity for impeding the sudden return of displaced organs after resection of the megacolon; if the cavity left by the resection had been packed with cotton or the peritoneum inflated, so as to allow a more gradual resumption of normal conditions, the outcome might have been different.

Membranous Pericolitis.—Bolognesi has examined for membranes and for a wrapping up with omentum at all his operations on the cecum or appendix during the last two years, and found only two cases with pericolic membranes such as Jackson has described. He examined cadavers also from the same point of view and experimented on two dogs and four rabbits. His conclusions from this material and extensive review of the literature are that pericolic membranes are not due to inflammatory processes but may be congenital or acquired. The symptoms ascribed to them are in reality secondary, due to superposed colitis or appendicitis or mechanical obstruction.

Archives de Médecine des Enfants, Paris

November, 1920, **23**, No. 11

*Retention of Breast Milk. C. Porcher.—p. 625. Begun in No. 10, p. 569.
Hygienic Advantages of Circumcision. C. H. Sztark.—p. 655.
Osteopsathyrosis in Boy of Eleven. E. Lesné and Langle.—p. 662.
Hulls of Grains in Feeding Children. J. Comby.—p. 668.

Retention of Breast Milk.—Porcher tabulates data sustaining his assertion that if the mammary gland is not thoroughly drained of its contents, there is retention of some of the milk, and that this tends to check the secretion of the gland. Less solid matters pass into the milk so that the milk seems impoverished and watery; there is no more water than usual but less of other elements in the milk. The fat and the proteins in the milk which normally drain away in the milk, behave as foreign bodies in the mammary gland when retained. This explains many phenomena observed, and particularly the passage of lactose into the urine. Whenever there is lactosuria, we can be confident there is retention of milk.

Bulletin de l'Académie de Médecine, Paris

Oct. 26, 1920, **84**, No. 33

No Connection Between Peat and Cancer. G. Patein et al.—p. 158.
Calcified Hydatid Cyst of Liver. Chauffard and Others.—p. 160.
*Epidemic Dysentery in the Bible. E. Boinet and J. Sicard.—p. 166.
*Improved Technic for Antiserums. J. W. Howard and S. Rañó (Buenos Aires).—p. 169.
Amebiasis in Egypt. H. Legrand.—p. 172.

Epidemic Dysentery in the Bible.—Boinet and Sicard present evidence that the epidemic disease described in Samuel I, chapter 5, must have been dysentery: "The hand of the Lord was against the city with a very great destruction; and he smote the men of the city . . . and they had emerods in their secret parts." . . . "And the men that died not were smitten with the emerods; and the cry of the city went up to

heaven." They think that by the word translated "emerods" was meant the prolapse of the rectal mucosa which is so common with tropical dysentery in young and old. Hemorrhoids could not have been meant, as these never occur in epidemic form. The "mice that mar the land" mentioned in the next chapter probably represented merely a casual coincidence.

Preparation of Therapeutic Antiserums.—Howard and Raño refer to their method of supersaturation of the animals for production of antiserums, inoculating a series in turn. The technic is not described here, but they report two cases of tuberculous meningitis cured with their antituberculosis serum.

Bulletin Médical, Paris

Oct. 16, 1920, **34**, No. 49

Practical Urology. R. le Fur.—p. 911. Cont'n.
Resection of Peptic Ulcer. E. Mugniéry.—p. 914.

Oct. 23, 1920, **34**, No. 50

*Diagnosis of Pulmonary Tuberculosis. M. Léon-Kindberg.—p. 935.

Early Diagnosis of Chronic Pulmonary Tuberculosis in Adults.—Kindberg insists that only the demonstration of the tubercle bacillus will clinch the diagnosis. A negative verdict is not a diagnosis; the cause for the symptoms must be discovered. Sometimes it may be necessary to examine the sputum again and again, promoting expectoration. The hour must be carefully chosen and the sputum collected by oneself; sometimes another series of examinations at a more propitious time may be necessary. The agreement or disagreement between the clinical, bacteriologic and the radiologic findings will decide whether to persevere longer. The time and efforts will not be considered wasted when a final verdict is reached. "The ideal is close cooperation between the physician and the radiologist and between the physician and the bacteriologist, remembering that one swallow does not make a summer and one tubercle bacillus does not make tuberculosis." The experiences during and since the war have demonstrated that the supposed incipient tuberculous pulmonary process in the adult practically invariably corresponds to lesions which are extensive from the start or rapidly become so, and that these lesions are excreting bacilli.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 15, 1920, **44**, No. 30

*Acute Purulent Pleurisy. M. Renaud.—p. 1225.
*Lethargic Encephalitis. N. Fiessinger and H. Janet.—p. 1230.
*Induced Elimination by the Lungs. V. Cordier.—p. 1236.
Lethargic Encephalitis with Initial Epileptic Seizure. G. Guillain.—p. 1238.
Hysteric Narcolepsy Simulating Lethargic Encephalitis. G. Guillain and P. Lechelle.—p. 1239.
Epidemic Encephalitis and Meningeal Hemorrhage. P. Merklen.—p. 1241.

Acute Purulent Pleurisy.—Renaud denounces the practice of early and extensive operation for acute purulent pleurisy. Opening up the thorax has no favorable influence on the grave situation when the lesion is in the lung and the prognosis depends on the heart. It has the further disadvantage that it diverts attention from the causal disease and the condition of heart and lung.

Blunders in Diagnosing Lethargic Encephalitis.—In the three cases reported the course of the cases corrected the diagnosis to meningeal hemorrhage, diffuse sarcomatosis or cerebral tuberculosis.

Acetone Test of the Functioning of the Lungs.—Cordier has not yet found any practical application of the test he describes, but it permits the measurement of the test acetone eliminated in the expired air and in the excreta. A 20 per cent. solution of acetone is not toxic, and when injected it is eliminated by these routes very evenly. The subject breathes into a gas mask, and the expired air passing into a solution of iodin forms iodoform, recognizable by the odor and by the precipitate.

Gynécologie et Obstétrique, Paris

1920, **2**, No. 3

*Means for Distinguishing a Triple Pregnancy. E. E. Möller.—p. 145.
*Change of Vertex into Face Presentation. P. Couinaud.—p. 147.
Three Cases of Malformation of the Arm. A. Kotzareff.—p. 151.
*Intra-Uterine Treatment of Postpartum Infection. H. Vignes.—p. 161.

Diagnosis of Triple Gestation.—Möller reproduces a roentgenogram which shows three heads in the uterus. It was taken just before delivery. The triplets were all male, and each had its separate chorion and amnion.

Delivery with Kyphotic Pelvis.—The case described by Couinaud confirms that the difficulty is in passing the spine of the ischium. The vertex presentation changed spontaneously to face presentation during forceps extraction. This much facilitated delivery, and he suggests that this should be artificially imitated in case of kyphosis in the lumbar region.

Local Treatment of Uterine Infection After Delivery.—Vignes comments on the change in opinion as to the wisdom of intra-uterine intervention after childbirth. The main reasons for this change have been the war experiences demonstrating that streptococcus infection is peculiarly rebellious to local measures, and that nothing short of excision into sound tissue is able to exterminate it. He reiterates that nothing justifies entering the uterus after the first week. An antiseptic fluid might be injected in case of retained scraps of membranes or clots, but this must be done early and not repeated, and it is usually useless. The curet is likewise useless, and is generally dangerous, as the uterine infection is streptococcal in the majority of cases. It is impossible to scrape away all the mucosa of the uterus, and we know from war wounds that even the minutest scrap of infected tissue left is liable to light up the process anew. He emphasizes, "Remove the whole, or leave it alone altogether." The only exception he admits is in case of retention of a placental cotyledon.

Journal de Médecine de Bordeaux

Sept. 10, 1920, **91**, No. 17

*Primary Actinomycosis of the Conjunctiva. Brunetière.—p. 459.
Pluriglandular Insufficiency with Acromegaly. J. Caussimon.—p. 462.
*Spina Ventosa. Rocher and Lasserre.—p. 466.
*Acute Dysenteric Syndromes. R. Damade.—p. 473.

Primary Actinomycosis of the Conjunctiva.—Brunetière reports a case of a pseudomembranous process in the conjunctiva of a young man in which the correct diagnosis of actinomycosis was not made for two years; bacilli mistaken for diphtheria bacilli had been cultivated from the pus. The purulent conjunctivitis had developed suddenly, and thick pseudomembranes had formed in less than a week and kept reforming after removal. In the course of the two years iridocyclitis and complete atrophy of the eyeball had resulted in the loss of vision notwithstanding antitoxin treatment, antistreptococcus serotherapy and other measures instituted by the various ophthalmologists who had had the case in turn. Finally on suspicion of actinomycosis, confirmed by the microscope, iodid treatment was instituted and the pseudomembrane disappeared and the conjunctiva started on the road to healing.

Spina Ventosa.—Rocher and Lasserre scrape out the spongy tissue from inside the periosteum through a lateral incision under continuous aspiration, with immediate primary suture and continuous extension. The hand is strapped to a small board, the traction applied to a loop of stout silk passed through the center of the nail and pulp of the finger, the loop fastened to a slit in the end of the board. They have applied the treatment in nine hospital cases in which a rapid cure was desirable, the lesion isolated, and heliotherapy or spa treatment out of the question on account of the expense.

Acute Dysentery.—Damade emphasizes the importance of exact differentiation as this alone permits causal treatment. Comparison of the improvement under emetin, antiserums or vaccines with the dragging course when they are not used, imparts great confidence in their efficacy.

Journal de Radiologie et d'Electrologie, Paris

September, 1920, **4**, No. 9

Organic Life. Life of Worlds and of Atoms. A. Broca.—p. 385.
Coolidge Tube in Radiotherapy. H. Béclère and Solomon.—p. 393.
Roentgenoscopy of Suboccipital Pott's Disease. Galland.—p. 404.
Radiopelvimetry. G. Haret.—p. 413.
Technic for Contrast Enema. H. Béclère.—p. 415.

Journal d'Urologie, Paris

1920, **9**, No. 5-6

*Incision for Phlegmon Above the Prostate. P. Bazy.—p. 335.
*High Frequency Current in Vesical Tuberculosis. A. Parisi.—p. 341.
*Papillary Tumor in Renal Pelvis. S. Rolando.—p. 381.
Angioma in Bladder Wall. P. Launay and others.—p. 385.

Treatment of Supraprostatic Phlegmon.—Bazy relates that a man of 50 was jolted on the pommel of the saddle, and pain and fever followed, with other symptoms suggesting pelvic cellulitis. It proved to be a phlegmon behind and below the prostate; the doughiness and pain were most pronounced on the right side, and the upper limits of the process could not be determined. Bazy had the bladder emptied and then he reached it by a suprapubic incision, and exposed its right side and part of the posterior aspect, separating the cellular and adipose tissue, keeping close against the bladder wall. He thus opened up a collection of reddish thick fluid. He did not disturb this, but worked curved forceps down through it to the perineum on the right side and pushed up the skin of the perineum. The skin was incised here and the end of a large drain was seized by the forceps and drawn up through the abdominal incision, which was sutured around it. Convalescence was brief and the cure complete.

High Frequency Current in Treatment of Tuberculosis of the Bladder.—Parisi reports ten cured and nine much improved among twenty-one patients with vesical tuberculosis, persisting after nephrectomy in seventeen of the cases. The interval since the nephrectomy varied from six months to six years. The proportion of cures was largest in the ulcerative form. The application was without direct contact with the tissues in all but two cases in which electrocoagulation was preferred. He adds that this spark method of *étincelage* might be applicable to residual tuberculous lesions in the ureter; by curing these, we ward off postoperative cystitis.

Primary Tumor in Kidney Pelvis.—In Rolando's case the pains in the kidney, the pyuria, and intermittent hematuria, with defective functioning of the kidney were explained by the tubular papillary adenoma, the calyx in question possibly having been malformed at this point. The tumor grew to fill the pelvis; hydronephrosis had followed, and then secondary infection.

Lyon Médical

Oct. 10, 1920, **129**, No. 19

Radium Therapy of Tumors in Ears, Nose or Throat. Lannois and Sargnon.—p. 807.
Oral Sepsis and Systemic Disease. J. Tellier.—p. 813.
*Tenderness of Muscles over Apical Lesion. Molle.—p. 838.

Tenderness in Muscles as Early Sign of Tuberculous Lesion Below.—Molle refers to the pectoralis and the trapezius. Reexamination of soldiers who had been suspected of tuberculosis months before has demonstrated that those among the suspects whose muscles in front of and behind the apex were tender, had all developed unmistakable tuberculous lesions in the interim. On the other hand, in those with normal muscles, their suspicious cough and bronchitis had harmlessly subsided and they were apparently healthy. The man is examined in a room alone with two physicians; one at the back palpates the muscles while the other, in front, watches the subject's expression for a grimace of pain or for the dilatation of the pupil which occurs when sharp pain is felt.

Oct. 25, 1920, **129**, No. 20

*Hysteric Pains in the Mastoid. F. J. Collet.—p. 847.
*Grafts of Dead Tendons. M. Durand.—p. 852.
*Sporotrichosis of Frontal Bone. H. Aloin and H. G. Vallin.—p. 859.

Hysteric Pain in the Mastoid.—In Collet's case the girl of 17 had required operative treatment of an acute right mastoiditis. A few months later she developed apparently the same syndrome on the left side, but the course of the case proved that hysteria was responsible for the clinical picture. Her previous experience with true mastoiditis rendered the hysteric syndrome exceptionally deceptive. The continued vomiting yielded only to a sham operation on the mastoid. Transient recurrence later and opening of a furuncle in the meatus restored conditions to clinically normal.

Dead Tendon Grafts.—Durand expatiates on the wide field for tendon implants now that Nageotte and Sencert have demonstrated that the tendons from the embryo taken from the uterus of a slaughtered cow are peculiarly adapted for grafting work, and that the fibrous portion of the tendon is all that is needed or wanted for the implant. This fibrous portion survives the death of the cells like the coral after the death of the coral polyps. The cells of the living organism in which the tendon is implanted grow into this fibrous framework and the new tendon thus becomes alive anew, part of the organism in which it has been implanted. They pass a thread through each end of the tendon and tie it, slightly stretched, to a glass rod, and place the whole in 90 per cent. alcohol, and seal. Eight or ten days later the alcohol is replaced with 60 per cent. alcohol; the tube is sealed anew, and the tendon is then ready for use. Some thus kept for seventeen months answered the purpose perfectly. The alcohol is rinsed out with tepid artificial serum when it is to be used. The implant is sutured in place with fine catgut, and the limb immobilized in plaster to relax the tendon. In Sencert's thirty-five grafts of the kind the implant was never cast off. Tendons with synovial sheaths are the hardest to manage.

Sporotrichosis of Frontal Bone.—The large abscess in the brow of the woman of 51 with spontaneous fistula and good general health suggested a syphilitic lesion, but glandular lesions in the neck and a recently developing pulmonary lesion pointed rather to tuberculosis. The histologic findings in a scrap from a gland were also taken for tuberculosis at the laboratory, but the true diagnosis was evident from the fungi in the sputum.

Nourrisson, Paris

September, 1920, **8**, No. 5

*Choleriform Diarrhea in Infants. A. B. Marfan.—p. 257.
*When the Newly Born Do Not Suck. P. Balard.—p. 277.
Bile Pigments in Putty Stools of Infants with Cow's Milk Dyspepsia. A. B. Marfan and H. Dorlencourt.—p. 286.
The Deficiency Diseases. H. Lemaire.—p. 289.

Choleriform Diarrhea in Infants.—Marfan remarks that this is generally primary. The one feature common to all the choleriform sets of symptoms seems to be the defective functioning of the epithelium lining the intestines. In Asiatic cholera and in cholera morbus, there is desquamation of the intestinal epithelium. In normal conditions this epithelium transforms the poisonous substances in the bowel or destroys them; when this toxicolytic function is arrested or vitiated, the unmodified toxins bring on the choleriform set of symptoms. Even when the source of the poisons is removed, by restriction to water, the damage done may persist for some time. The injury of the intestinal epithelium may be from microbian toxins or from arsenic or other drugs acting on the epithelium, or from the poisons generated in the course of pneumonia or miliary tuberculosis. In short, he concludes, the choleric syndrome is in digestive disturbances what uremia is in kidney disease, or asystoly in heart disease: It is the manifestation of a transient or permanent lapse of the toxicolytic function of the bowel epithelium.

When the New-Born Infant Does Not Suck the Nipple.—Balard has noted that when the woman is delivered in a cold room, it is often impossible to get the infant to suck at first. The generalized muscular atony resulting from the chilling may prevent the effort of sucking. The effort required for this is evident in the increased arterial pressure after nursing. The records of 1,500 infants show that the infants of mothers who had been given chloroform were later in sucking spontaneously than the infants of other mothers, sometimes fully twenty-four hours later. In certain rare cases the infant merely laps and chews on the nipple, without sucking. In such cases, artificial feeding is the only resort as the fluid flows more readily from the bottle than from the breast without the sucking traction. In one such case the child seemed mentally normal when reexamined ten months later. Every effort must be made to keep up the secretion of breast milk until the infant is able to take the breast normally. Sometimes a dose of castor oil will clear out the meconium and

after this the child will take the breast correctly. In others the anorexia may long persist, compelling gavage, and suggesting the possibility of malformation of the brain.

Paris Médical

Oct. 9, 1920, **10**, No. 41

Roentgen-Ray Treatment of Epitheliomas. Dubreuilh.—p. 265.
Iron in Therapeutics. A. Richaud.—p. 268.
*Cartilage Support for Sunken-In Nose. Dufourmentel.—p. 272.

Restoring Sunken-In Nose.—Dufourmentel makes a very small incision in the eyebrow and works a special bistoury through this buttonhole, not more than 1 cm. in length, and detaches, from beneath, the skin of the nose along the back down to the tip. Then through a 4 cm. vertical incision he resects the seventh costal cartilage to obtain a graft to support the skin of the nose. This cartilage implant is worked down into place through the small hole in the eyebrow. If not enough, a second strip of cartilage can be worked down also. The vertical incision permits the muscular fibers to be pushed apart without cutting them, so that no suture is required for the rectus muscle.

Oct. 16, 1920, **10**, No. 42

*Tardy Infantilism in Adults. P. Lereboullet and J. Mouzon.—p. 277.
Pyelography with Hydatid Cyst in Kidney, Forestier and Michon. —p. 282.
State of Mind After an Industrial Accident. P. Benon.—p. 285.

Tardy Infantilism in Adults.—The essential feature of this reversive infantilism is the loss of the sex characters in adults. It differs from abortive forms of myxedema and the adiposogenital syndrome, but the pituitary seems to be primarily at fault, and the frequency of syphilis in the antecedents is striking. There is much to sustain the assumption of injury of the pituitary from a syphilitic lesion in adjacent bone.

Presse Médicale, Paris

Oct. 16, 1920, **28**, No. 75

*Aneurysm of the Aorta. A. Martinet.—p. 733.
*Local Lesion in Vaccination. C. Levaditi and G. Banu.—p. 735.
*Treatment of General Paresis. P. Pagniez.—p. 736.

Aneurysms of the Aorta.—Martinet found only 5 among his 29 patients with aneurysm of the aorta whose history seemed to exclude the possibility of syphilis. It is found four times more frequently in men than in women, and the patients succumb in about equal proportions to cachexia, asystole or asphyxia and to fulminating hemorrhage or syncope. But long survival without much interference with ordinary life is possible even with enormous ectasia. The outcome is not known in 8 patients but 9 are still living after intervals of from sixteen months to twelve years, and the interval before death in the 12 cases with fatal termination ranged from three, ten, and sixteen months to seven years. He remarks that the "ethylate of syphilis" (syphilis plus alcoholism) is particularly dangerous.

Share of Local Lesion in Vaccination.—Levaditi and Banu report experiments on rabbits which demonstrated that the local reaction to inoculation with a vaccine has nothing to do with the production of antibodies but rather detracts from said production. The conclusion is evident that the choice should be given to vaccines which induce the minimum of local reaction. It is still unknown which tissues are engaged in production of antibodies, but they say that there is much to sustain Besredka's view that the intestinal mucosa is prominently involved, at least in the acquired refractory state.

Treatment of General Paresis by Induced Fever.—Pagniez refers to recent attempts in Germany to arrest the progress of general paresis by inoculation with malaria or relapsing fever. (Some of these attempts were mentioned in these columns, April 3, 1920, p. 988.) He thinks, with the writers, that the percentage of remissions is not high enough to be convincing, but that the way in which the remissions occurred seems to indicate something beyond a mere coincidence. Mühlens and Weygandt have had an interval since of only a few months, but in Wagner's case the remission after inoculation with malaria had persisted for three years. Pagniez cites thirty-seven cases in which this treatment has been applied, and mentions also Weichbrodt and Jahnel's experiments on rabbits with induced syphilitic chancres in the scrotum. The chancres retrogressed and subsided completely in a few weeks after the animals had been kept at a temperature of 41 C. for half an hour once or twice a day for several days. The central temperature of the rabbits reached 42 or 44 C. after half an hour in the incubator at 41 C. (105.8 F.). Although this result was not quite constant, yet it is accepted as demonstrating the sterilizing action of high temperatures on the vitality of the spirochetes in experimental syphilis. The deduction seemed clear that in general paresis inoculation of some disease inducing waves of high temperature might have a beneficial effect. Pagniez remarks in conclusion tertian malaria seems to offer the best prospects for success, but that, the patient's tolerance for quinin should be determined beforehand, also that arsphenamin treatment might be pushed at the same time. The German workers are now experimenting in this line, he says.

Oct. 20, 1920, **28**, No. 76

*Serologic Tests in Maternities. P. Nobécourt and Bonnet.—p. 745.
Blood Pressure Not Characteristic in Epilepsy. Hartenberg.—p. 748.

Oct. 23, 1920, **28**, No. 77

Emotions and Exophthalmic Goiter. G. Roussy and L. Cornil.—p. 753.
Pelvimetry with Roentgenoscopy. Haret and Grunkraut.—p. 756.
Present Status of Treatment of Soft Chancre. L. Cheinisse.—p. 757.

Serologic Test in Maternities.—Nobécourt and Bonnet found the response to serologic tests for syphilis parallel in the blood of both mother and babe in 89.69 per cent. of 447 tests. The response was positive in over 4 per cent. of all the women admitted to the maternity.

Oct. 27, 1920, **28**, No. 78

*Peripheral Sympathectomy for Ulceration. R. Leriche.—p. 765.
*Rôle of Calcium in Tetany. R. H. Kummer.—p. 765.

Periarterial Sympathectomy for Ulceration of Stump.—Leriche resected the sympathetic network in the sheath of the femoral artery for a stretch of about 7 cm. hoping to arrest a spontaneous trophic ulceration on the amputation stump. The aspect of the stump was perfect but it swelled when the man attempted to use an artificial limb, so he had been condemned to crutches for a year when the rebellious ulceration developed. After the peripheral sympathectomy the fifty-fourth day, the ulceration healed spontaneously and completely within a month, and the artificial limb can now be worn without the slightest inconvenience. Leriche adds that the patient had been presenting symptoms suggesting a loss of sympathetic balance, periods of vasodilatation with edema, coming and going abruptly, and chilliness.

Rôle of Calcium in Tetany.—Kummer discusses the theory which ascribes tetany to an upset in the metabolism of calcium, and the parathyroid theory, and describes some cases which apparently demonstrate that when there is a predisposition to tetany, ingestion of citric acid (oranges or lemons) causes such losses of calcium that attacks of tetany may follow. He describes two such cases in detail, discussing further the possible guanidin factor.

Oct. 30, 1920, **28**, No. 79

*Mechanical Function of the Appendix. H. Dufour.—p. 773.
*Familial Serotherapy. J. Chalier.—p. 773.
Calmette and Massol Technic in Wassermann Test. G. Vallet.—p. 775.
Temporary Metal Support for Fractured Bone. A. Tzaico.—p. 776.

Mechanical Rôle of the Appendix.—Dufour presents some evidence that stimulating the outside of an intestine or the peritoneum close to it is the most effectual means for starting peristalsis in it. When the appendix fills with feces and straightens out, its free end mechanically irritates the peritoneum and thus sets up peristalsis in the bowel in the region. An adherent or obliterated appendix is of no functional use in this respect, and hence its removal can be only an advantage. But the normal appendix should not be removed unnecessarily, he declares.

Familial Serotherapy.—Chalier calls attention to the prospects for serotherapy opened by cases such as one he describes in which a youth with severe and progressive hemophilia was given eleven intravenous injections of from 25 to 40 c.c. of his mother's blood serum in the course of eight months. This soon restored the practically bedridden patient to active life. A similar successful application of familial serotherapy was in the case of a woman of 30 with chronic hemorrhagic pur-

pura, the erythrocytes dropping to 800,000. A total of 77 c.c. of blood serum from her sister was injected in twenty days, and prompt improvement was soon evident—an actual resurrection. He thinks that this familial serotherapy should be tried in severe chlorosis and pernicious anemia of obscure origin.

Nov. 6, 1920, **28**, No. 81

*Gastrectomy for Cancer. V. Pauchet and M. Delort.—p. 793.
*The Blood Count in Infections. L. Audain.—p. 796.
*Azotemia and Uremia. M. Hélouin.—p. 797.
*Seasickness. L. Cheinisse.—p. 798.

Gastrectomy for Cancer.—Pauchet and Delort emphasize that gastric ulcer with pain, vomiting and hemorrhage is less frequent than the latent form, and it is almost impossible to distinguish between a recent ulcer and a chronic incurable ulcer. They declare that every chronic ulcer calls for operation, and that every active ulcer in persons of 40 or over should be operated on at once without wasting time on internal measures. They describe with thirteen illustrations the technic for gastrectomy with gastropyloric cancer, and the medical care of the patient before and after.

The Blood Count in Infections.—Audain explains how the invading infection is combated by polynuclears which flock from near and far when the region invaded is poor in lymphoid elements. When lymphoid elements abound in the region, these assume the local defense, and mononucleosis is the rule. If the lymphoid elements are not adequate to the task, the polynuclears assume it until the local mononucleosis is ready to take it up. Inflammatory processes in lungs, bladder and other regions with few lymphoid elements are accompanied throughout with polynucleosis, while those in the intestines, glands, spleen, etc., show mononucleosis. If a child with high fever and nothing to call attention to any special organ shows first slight polynucleosis and a few hours later persisting mononucleosis, we can suspect that the infectious process is in the bowel. As the number of leukocytes is an index of the resisting powers of the organism, it throws light on the prognosis as it rises or falls.

Azotemia and Uremia.—Hélouin tests every patient with albuminuria for azotemia, and has never found one capable of leading an active life when there was more than 2 gm. of urea in the blood. He reiterates that urea has a toxic action, and that the sodium hypobromite test shows not only the urea but all the other bodies analogous to urea generated by the reaction to the toxic action from the urea and by the pathologic condition otherwise. The xanthydrol test, on the other hand, shows only the urea.

Seasickness.—Cheinisse compares Nolf's explanation of seasickness with other theories in vogue, emphasizing that nothing resembles so closely the general condition in seasickness as moderate poisoning from pilocarpin, muscarin or eserin. Nolf shows that the symptoms of seasickness can be explained by the irritation of the vestibular nerves, from the movements of the ship, influencing the adjacent centrifugal bulbar nerves. All the manifestations of seasickness can thus be readily explained as a transient state of hyperexcitability of the bulbar autonomic system, and especially of the pneumogastric nerve. Those predisposed to vagotonia are usually the ones that develop seasickness, and by reducing the tendency to vagotonia with atropin, we can reduce the tendency to seasickness. He advises taking three or four pills of 0.5 mg. atropin during the course of the day or when the sea is rough to ward off seasickness on long voyages. But usually 2 mg. taken fractioned at half hour intervals just before and after the boat leaves, are generally sufficient. If this treatment is not begun until after vomiting has set in, the drug may have to be given subcutaneously. [Nolf is professor of physiology at the University of Liége and during the war was chief of the service of infectious diseases in the Belgian army. He read a paper at the 1919 meeting of the American Medical Association, on protein therapy, and is now in South America. Cazamian's endorsement of atropin combined with epinephrin in treatment and prevention of seasickness was mentioned in The Journal, Sept. 27, 1919, p. 1017. Pron has also commended tincture of belladonna as a preventive: 25 drops before the boat leaves, repeating to 100 drops in the twenty-four hours. Prof. A. Robin's atropin formula has long proved useful in combating vomiting, and might be tried in seasickness. The formula is: picrotoxin, 0.05 gm. with enough alcohol to dissolve it; morphin, 0.05 gm.; atropin sulphate, 1 cg.; extract of ergot purified (ergotin Bonjean), 1 gm., and 12 gm. of cherry laurel water. [Five drops to be taken in a little water ten minutes before the meal.]

Nov. 10, 1920, **28**, No. 82

*Correction of Displacement of Uterus. L. Dartigues.—p. 805.
*Sodium Silicate by the Vein. L. Scheffler and others.—p. 806.
*Improved Technic for Serotherapy. P. Brodin.—p. 807.

To Correct Displacement of the Uterus.—Dartigues shows in nine large illustrations his method for drawing up and holding the uterus in place by shortening the round ligaments. The latter are reached through the inguinal canal, the slightly curving transverse median incision allowing the soft parts to be stretched enough to permit access to the inguinal canal. The loops of the round ligaments thus drawn out on each side are sutured together in front of or just above the pubis, which restores anatomic conditions in the uterus and adnexa. The incision in the peritoneum is vertical. The first illustration shows his method for emptying the pelvis as much as possible beforehand: With the pelvis raised, he takes up a large fold in the abdominal wall on the median line; its action is something like that of a cupping glass, the suction drawing up out of the way the contents of the abdomen.

Sodium Silicate by the Vein.—A deficiency in silica seems to be one of the factors in the predisposition to arteriosclerosis and to tuberculosis. The research here related shows that sodium silicate can be given by the vein at need without harm. The dose generally used was 2 c.c. of a 1:1,000 solution, injected on alternate days, a total of ten injections; recommencing after suspension for a week or two. It was used for patients with arteriosclerosis, cardiorenal disease and angina pectoris as well as in tuberculosis. Among those improving under this treatment was one man of 53 confined to bed by the headache and vertigo of cerebral arteriosclerosis, who was restored to active life and can now read and walk without pains.

Improved Technic for Serotherapy.—Brodin has found that the immediate disturbances sometimes observed with serotherapy can be averted by diluting the serum with nine times its volume of 8:1,000 sodium chlorid solution. This practice is based on the discovery that the severe anaphylaxis which is otherwise almost inevitable in a dog sensitized by a previous injection of horse serum could be entirely prevented when a second injection of the serum was made by diluting the serum at the second injection with nine times its volume of 8:1,000 sodium chlorid solution. If the saline is injected a few minutes before the second injection of the serum, the protection is the same. See first abstract, p. 1755.

Progrès Médical, Paris

Sept. 11, 1920, **35**, No. 37

Globulin in Serum with Cancer. Loeper and J. Tonnet.—p. 397.
Trophic Changes with Lesions of Tibial Nerve. A. Barbé.—p. 397.
*Hermaphrodites in Art and Literature. Laignel-Lavastine.—p. 399.
Pneumococcus Malignant Endocarditis. J. Tapie and Rouquet.—p. 403.

Hermaphrodites in Art.—Lavastine entitles his article "Les androgynes et les gynandres," and reproduces a mural painting from Pompeii, "La toilette de l'hermaphrodite," and the large statue of the hermaphrodite in the National Museum at Rome, and discusses the various types of hermaphrodites, comparing them with two clinical cases described.

Sept. 18, 1920, **35**, No. 38

*Treatment of Myxedema. P. Sainton.—p. 409.
Examination of the Heart in Children. Nobécourt.—p. 410.

Treatment of Myxedema.—Sainton remarks that the treatment of myxedema has to be first tentative, testing the tolerance for thyroid treatment, watching the pulse and excitability. Then, the dose once established, this is kept up regularly, suspending it for one week during the month. Finally, the dose can be reduced and the intervals lengthened, as it rarely happens that the patient can ever get along without a little thyroid treatment. As a rule, he says, thyroid treatment is more effectual the later the myxedema had developed. Change of country, the seashore, and heliotherapy may

have a favorable influence on endemic myxedema. In all forms, calcium, arsenic, phosphorus and iron are useful adjuvants, alternating them.

Revue de Médecine, Paris

1920, **37**, No. 1

Raphaël Lépine (1840-1919). F. J. Collet.—p. 1.
*Anti-Anaphylaxis. P. Brodin, C. Richet and F. Saint-Girons.—p. 7.
*Sciatica and Arthritis. J. A. Barré and P. Le M. Duprey.—p. 16.
*Cardiac Dilatation. C. Esmein.—p 45
Studies of Ferments. H. Godlewski.—p. 56. Conc'n in No. 4, p. 249.

Salt Method of Antianaphylaxis.—Brodin finds experiments on dogs prove that injection of common salt counteracts anaphylaxis, in doses of not less than 0.8 gm. per kilogram body weight. Reference is made to the dechlorination of food in epilepsy and to the fact that salt introduced intravenously, reduces the toxicity of potassium iodid three and one-half times. The specific influence of sodium chlorid on the nerves is discussed, and the mechanism of this new method of anti-anaphylaxis. It is described further in an abstract opposite.

Sciatica and Sacro-Iliac Arthritis.—Barré elucidates the differential diagnosis by a thorough analysis of six cases. The treatment, besides salicylates; aspirin; puncture of tuberculous abscess if present, embraces aconite ionization (1 to 200 parts of distilled water), together with anesthetics injected at the joint, preferably in younger patients (cocain: 0.5 cg. per cubic centimeter of the solution; amount injected, from 1 to 3 c.c., or other anesthetics were used).

Cardiac Dilation.—Esmein describes four cases of cardiac insufficiency beneficially treated with ouabain, which seems preferable to digitalis with extreme dilatation and coupled rhythm.

1920, **37**, No. 2

Tuberculous and Syphilitic "Scrofula." E. Sergent.—p. 65.
Chronic Hemorrhagic Dyscrasia. P. E. Weil.—p. 81.
*Wassermann Reaction Outside of Syphilis. A. Touraine.—p. 103.

The Wassermann Reaction Outside of Syphilis.—Touraine marshals a number of tropical diseases which give a positive Wassermann. Leprosy gives the reaction in 47 per cent. of cases, the tuberculous form even in about 80 per cent. Pulmonary tuberculosis is known to have reacted in 197 out of 848 cases, lupus in 50 per cent. of cases. Even a prolonged ether or chloroform narcosis will give a positive Wassermann in about 25 per cent. of instances. A number of blood diseases (hemoglobinuria, leukemia) occasionally also contribute to the source of possible errors. Author warns against a one-sided conclusion on the basis of positive Wassermanns.

1920, **37**, No. 3

*Typhoid Bacillus in Jaundice. M. Garnier and J. Reilly.—p. 129.
*Pulmonary Echinococcosis. V. Cordier.—p. 151. Conc'n in No. 4, —p. 236.
*Pyelonephritis and Pyelocystitis. C. Richet, Jr., and Langle.—p. 168.
*Gangrene of Limbs. J. Baumel.—p. 179.

Typhoid Bacillus in Jaundice.—Garnier and Reilly attribute a number of epidemics of jaundice to typhoid and paratyphoid infection, supporting this theory on a very exhaustive study of four cases, the only ones of typhoid origin in 1,300 cases of acute jaundice. A number of bacterial analyses were made, yet they do not attribute to the typhoid bacillus a specific icterigenous efficiency, but credit it with a property of causing a biliary retention in the liver, which facilitates the specific splenic infection.

Pulmonary Echinococcosis.—Cordier found in the vicinity of Lyon five cases of hydatidosis. He studied the cysts, their rupture and the incidental injuries to the pulmonary tissue, which may give rise to pneumococcic or tuberculous invasion. This form of infection seems not hitherto to have been recognized.

Pyelonephritis and Pyelocystitis Caused by the Coli-Eberth Group of Bacilli.—Richet and Langle studied four cases of infection where they isolated coli-Eberth bacilli in the urinary passages. This exemplifies an invasion of the renal and vesical passages of an infection originating in the blood, which is a fact of great etiologic significance in disease of the urinary apparatus.

Gangrenous Infection of the Extremities.—Baumel discusses at length the etiology of gangrene in its various forms and the indications for the use of monovalent and polyvalent serums, the methods of injection, and combination of serotherapy with surgical treatment. He regards the results gained by the use of sera as fully conclusive as regards the protection of future armies.

1920, **37**, No. 4

Special Type of Spirochete Responsible for General Paresis. A. Marie and C. Levaditi.—p. 193.
Arsenical Erythema of the Ninth Day. G. Milian.—p. 222.

1920, **37**, No. 5

Paralysis of Hand. A. Pitres and A. Laffaille.—p. 257.
*Infectious Thrombo-Arteritis. J. Minet and M. Pelissier.—p. 287.
Delirious Hyperthymia. R. Benon.—p. 313.

Infectious Thrombo-Arteritis of the Ascending Aorta.—Minet and Pelissier studied the hyaline degeneration of the connective and amorphous tissues due to the disorganization of its elastic tissue. The explanation of the manner of development is the following: In the aorta were found patches of endo-arteritis, some undoubtedly old, others young. This indicates a previous attack of an infection with lesions and aneurysms, the scars of which could be demonstrated. When another infection occurred, it would attack localities of least resistance and cause small aneurisms, or occasionally a thrombus, which, little by little would develop into a polypiform mass, usually the last stage of the disease. The cases quoted show many varieties of these lesions notably the sclero-atrophic aortitis due to syphilis. It is possible, but not conclusively proved that rheumatic infection may give rise at least to the initial lesion.

Schweizerische medizinische Wochenschrift, Basel

Nov. 11, 1920, **50**, No. 46

*Auto-Urine Test for Tuberculosis. O. Imhof.—p. 1033.
Prism Glasses for Cosmetic Purposes. J. Strebel.—p. 1038.
Influenza Pneumonia with Artificial Pneumothorax. Mayer.—p. 1042.
*Lumbar Puncture with Lethargic Encephalitis. R. Fritzsche.—p. 1045. Conc'n in No. 45, p. 1018.

Auto-Urine and Autoserum Biologic Test for Tuberculosis.—THE JOURNAL described, Aug. 9, 1919, p. 456, Wildbolz' intradermal test with the patient's own urine. It is injected like the Mantoux intradermal tuberculin test, and further experience has confirmed its reliability. In this communication from Wildbolz' service, Imhof states that the responses were constantly negative in the nontuberculous and (with a single exception) constantly positive whenever there was an active tuberculous process. In some of the cases there were no clinical manifestations at the time to sustain the positive biologic reaction, but the course of the cases always brought signs of active tuberculosis before long. He applied the double auto-urine and autoserum tests to 100 persons, and usually the Mantoux intradermal tuberculin test at the time or later. The positive response is an infiltration, palpation of a lump in the tissues; redness and necrosis are disregarded. In fact, he examines for the response with shut eyes. The auto-urine reaction naturally depends on the kidneys being functionally capable of secreting; when this is not the case the autoserum answers the same purpose, but the response is never so pronounced as with the urine. Serum obtained after clotting of the blood does not elicit a response, confirming that the antigens are combined with the formed elements of the blood. He regards these auto tests as more reliable and more delicate than the findings with clinical and roentgen-ray examination. To avoid disturbing protein reactions with the blood serum, he precipitates the albumin with alcohol and heating for a minute or two. When the patient is in a condition of anergy, the intradermal test with his urine or serum may have to be applied to another person known to be tuberculous.

Lumbar Puncture in Lethargic Encephalitis.—Fritzsche did not find anything to suggest hypertension in the cerebrospinal fluid in his patients with epidemic encephalitis, and no relief followed lumbar puncture. In one case the condition seemed to have been aggravated by it.

Pediatria, Naples

July 15, 1920, **28**, No. 14

Vaccine Treatment of Typhoid. R. K.-Marinucci.—p. 641. Cont'd.
Desquamating Erythrodermia; Two Cases. A. Gismondi.—p. 665.

Policlinico, Rome

Sept. 20, 1920, **27**, No. 38

*Vaccine for Pertussis. L. Spolverini.—p. 1043.
Neuralgic Angiomas. G. Trogu.—p. 1046.
*Tests for Acetone. E. Pittarelli.—p. 1047.

Vaccine in Prophylaxis and Treatment of Whooping Cough.—Spolverini cites 408 cases of whooping cough reported by eight different clinicians in which vaccine treatment was tried with excellent results in a large proportion, but adds a record of over 100 cases reported by seven others in which no benefit was apparent. He describes the technic for the vaccine he has been using in ninety-eight children with pertussis and in forty-six others to whom it was given for prophylactic purposes. He refers further to 119 other children treated by three other clinicians with the same vaccine. When it was injected during the first ten days, during the catarrhal stage of the disease, marked improvement was the rule, the spasms becoming attenuated and disappearing. In a few instances brilliant results were obtained also at an advanced stage, but in the majority of cases, after transient improvement, the symptoms returned as pronounced as before. His experience suggests that the Bordet-Gengou bacillus starts the disease and opens the portals to other bacteria but the latter by the end of the third week crowd out the former, and hence a Bordet-Gengou vaccine is useless after that date.

Tests for Acetone.—Pittarelli describes some new reactions which reveal the presence of acetone, and calls attention in particular to a simple technic which shows up the acetone by the odor and tint of iodoform or the odor of carbilamin.

Riforma Medica, Naples

Aug. 21, 1920, **36**, No. 34

Chronic Osteomyelitis. L. de Gaetano.—p. 757.
Noncomplicated Anorectal Atresia. G. Bolognesi.—p. 759.
*Appendicectomy by Lumbar Incision. T. Meucci.—p. 760.
Calot's Fluid for Gonococcus Infection of Uterine Cervix. G. Lampronti.—p. 762.

Appendicectomy by Lumbar Incision.—Meucci operates on the appendix through a lumbar incision when there is a movable kidney to be fastened, or the extra long and large cecum has to be shortened. The latter is reached much more easily from the back. He also prefers this route when there is reason to assume that the appendix or an abscess lies far toward the side or back. A special advantage of the lumbar route is the lesser danger of postoperative hernia.

Brazil-Medico, Rio de Janeiro

Aug. 7, 1920, **34**, No. 32

*Reconstruction of Popliteal Artery. L. Renaux.—p. 509.
Polycystic Kidney. J. de Mendonça.—p. 510.
Medical Terms in Otology. J. Adeodato.—p. 511.
Tests for Cerebrospinal Fluid in Syphilis. G. de Moura Costa.—p. 517.

Aug. 14, 1920, **34**, No. 33

Lethargic Encephalitis. Teixera Mendes and M. Studart.—p. 527.

Reconstruction of Popliteal Artery.—The gap of 17 cm. after resection of the popliteal aneurysm was bridged with a segment taken from the internal saphenous vein. A glass rod lubricated with petrolatum was introduced into each end of the vein, and the projecting end of the rod was worked into each stump of the artery. The implanted vein and the artery were then sutured together with fine silk over the glass rods. The rods were then withdrawn and the suture threads knotted. When the Esmarch bandage was removed there was a little hemorrhage between the stitches, but this was arrested by covering the sutures with a thin sheet of muscle tissue from the vicinity. The operation was a complete success.

Semana Médica, Buenos Aires

July 8, 1920, **27**, No. 28

Myotonic Form of Lethargic Encephalitis. J. Destéfano.—p. 33.
*Causes for Dystocia. E. A. Boero.—p. 36. Cont'n.
Tuberculin Treatment of Tuberculosis. L. K. Wimmer.—p. 44.
*Arsphenamin in Tabes and General Paresis. A. Bergman.—p. 55.
Influenza. M. Beatti.—p. 58.

July 15, 1920, **27**, No. 29

Research on the Phenolanilids. J. A. Sánchez.—p. 65.
Priority in Physiologic Research. F. L. Soler.—p. 71.
Differential Diagnosis of Confusional States. G. Bermann.—p. 87.
Plasmogenesis from Therapeutic Standpoint. V. Delfino.—p. 92.

July 22, 1920, **27**, No. 30

Fatal Case of Lethargic Encephalitis. Valls and Sánchez.—p. 97.
Priority in Physiologic Research. J. Guglielmetti.—p. 100.
Causes for Dystocia. E. A. Boero.—p. 109. Cont'n.
Toxic Action from Morphin and Neo-Arsphenamin by the Vein. F. Albina.—p. 122.

Dystocia from Tetanization of Bandl's Ring.—In the course of his long study of dystocia, Boero says of this type that the woman must be given a general anesthetic until the muscular ring relaxes completely. Any mobilization of the fetus or manipulations before this are liable not only to aggravate the tetanization but may lead to rupture of the uterus wall. The tetanization subsides under chloroform, while mere retraction of the uterus walls does not. The tetanization does not begin until the cervix is well or completely dilated, and dystocia from this cause is more common in multiparas, usually those with a normal pelvis.

Neo-Arsphenamin in Tabes and General Paresis.—Bergman's experience with four cases was disappointing, the tabes or general paresis having been apparently aggravated by the neo-arsphenamin. It was given in small repeated doses and it seemed to have aided in the destruction of nerve tissue.

Deutsche medizinische Wochenschrift, Berlin

Sept. 9, 1920, **46**, No. 37

Effect of Dyes on Bacterial Infections. Neufeld et al.—p. 1013.
*Theory of Chemotherapeutic Action. H. Langer.—p. 1015.
Filling of Lung Cavities with Animal Fat. R. T. Eden.—p. 1017.
Sessile Receptors in Anaphylaxis and Rôle of Autonomic Nervous System in Anaphylactic Syndrome. Arnoldi and Leschke.—p. 1018.
Plexus Injuries in Fractures of Clavicle. F. Lotsch.—p. 1019.
No Recurrence in Eight Years of an Intramedullary Angioma and of an Extramedullary Tumor. F. Schultze.—p. 1021.
Theory of the Lipoid Fixation Reaction. E. Meinecke.—p. 1022.
Occurrence and Staining of Influenza Bacilli. Messerschmidt.—p. 1023.
Contrast Filling of Tuberculous Fistulas. B. Döhner.—p. 1024.
Transmission of Malaria by Blood Transfusion. Oehlecker.—p. 1025.
Appendicostomy in Chronic Dysentery. F. Niklas.—p. 1026.
Flea Bites and Flea-Bite Urticaria. E. Hoffmann.—p. 1028.
The Internal Secretions. Asher.—p. 1028. Conc'n No. 38, p. 1056.
Otologic Hints for the General Practitioner. G. Brühl.—p. 1030.

Theory of Chemotherapeutic Action.—Langer recalls that the efficacy of a bactericidal agent depends on its power to penetrate the exterior of bacteria. The measure of its ability to do this is closely connected with its diffusibility. It is thus dependent on the electrolytic qualities of the semicolloidal solution. Picturing the exterior coat of bacteria as a net, then only such solutions will be able to penetrate the outer covering whose particles are small enough to pass through the meshes of the net. In the interior of the bacteria, under the influence of the substances contained in the body, these particles become enlarged and are thus prevented from being washed out of the bacteria, as they cannot pass through the meshes of the net. If the particles are very small, even though they become enlarged, they may still pass out through the meshes and thus exert only a very slight effect on the bacteria. On the other hand, if the particles are too large, they cannot penetrate the exterior of the bacteria and will therefore have no bactericidal action whatever. Derivatives with greater diffusibility are better adapted for bactericides, and derivatives with less diffusibility for chemotherapeutic antisepsis.

Münchener medizinische Wochenschrift, Munich

Aug. 27, 1920, **67**, No. 35

*Activation of Antigens. H. Much.—p. 1005.
Chronic Influenza. W. Hildebrandt.—p. 1008.
Diagnosis of Pericardial Effusions. K. Traugott.—p. 1010.
Tardy Agglutination in Typhoid. Hüne and Bulle.—p. 1011.
Drug plus Phototherapy in Sexual Diseases. Breiger.—p. 1012.
Cure of Dermatomyositis with Arsphenamin. Kroemer.—p. 1015.
Treatment of Syphilis with Mercury-Arsphenamin. Zirn.—p. 1017.
A Helpful Formula in Phototherapy. L. Zimmermann.—p. 1019.
Vaginal Electrode for Thermopenetration. K. Kayser.—p. 1020.
*Steinach's Attempts at Rejuvenation. B. Romeis.—p. 1020.

Activation of Antigens by Dilution and Distribution.—Much discusses some biologic laws which he thinks govern vaccine therapy. He explains as follows how injection of the same substance that produces the disease can benefit the patient: (1) The animal organism can produce antibodies only when stimulated by activated substances. In the patient the antigens are usually not sufficiently activated, for the reason that they are in an impacted condition and their molecules are not

loosened up. The antigen is locked up, as it were. If unlocked antigens are introduced into the body of the patient he can defend himself against them by the production of antibodies, provided the antigens are administered in an innocuous form and in harmless quantities. (2) The fully potent antigen may furnish too strong a stimulation. Overstimulation causes no reaction, whereas milder stimulation does do so. (3) The isolated position of the focus of infection with reference to the blood and lymph may make the formation of antibodies impossible. The activated antigens, however, that are injected enter the blood and lymph and the body can react to them. Vaccine therapy thus depends to a great extent on the principle that the antigens by being highly diluted exert a greater effect. Another important principle is distribution. A pathogenic agent may act through several of its different elements. Against each substance or partial antigen a partial antibody is formed. Immunity is not complete unless all the partial antibodies are present. There are two forms of immunity: cell immunity and blood immunity. Cellular immunity is the more important. With staphylococcus infection, it may occur that the partial antibodies against the staphylococcus fat are present, whereas those that would act against the staphylococcus protein are absent or insufficient; in this case the immunity would be incomplete. The testing of immunity must, therefore, be done with partial antigens and not with complete antigens. Another important effect of the separation or distribution of the antigens is that they thus become more highly activated. The various partial antigens, when mixed together (whether naturally or artificially), exert an influence on each other. Their effect may be thus much lessened or even destroyed entirely, for which reason distribution into partial antigens is necessary in order to secure a thorough immunologic test.

Steinach's Attempts at Rejuvenation.—Romeis warns against too great optimism in connection with Steinach's experiments. The sexual glands, though they may possess extraordinary importance in the animal organism, are, after all, only a part of the whole, just as is the case with the other organs of internal secretion: the thyroid, thymus, pineal body, etc. The latter, also, undergo senile changes and require rejuvenation if the whole body is to be rejuvenated. The same thing is true of all the organs of the body.

Wiener klinische Wochenschrift, Vienna

March 11, 1920, **33**, No. 11

Oral Auscultation. F. Hamburger.—p. 227.
Periodicity of Manifestations in Gastric and Duodenal Ulcer. F. Brunn and others.—p. 228. Reply. R. Fleckseder. No. 13, p. 272.
Epidemic Encephalitis. L. Dimitz.—p. 231.
Echinococcus Cysts in Lungs. A. Arnstein.—p. 234.

March 18, 1920, **33**, No. 12

Aims of Instruction in Forensic Medicine. F. Reuter.—p. 245.
Diplococcus Pneumoniae Infection of Pharynx. A. Heindl.—p. 250.
Symptomatology of Hemiplegia. H. Faschingbauer.—p. 251.
Diagnostic Import of Lateral Thoracic Glands. Plaschkes.—p. 252.
Resection of Perforated Gastric Ulcers. C. Massari.—p. 254.

March 25, 1920, **33**, No. 13

Restoration of Law Making Measles Notifiable. R. Jahn.—p. 263.
Rhinogenous Origin of Retrobulbar Neuritis. M. Hajek.—p. 267.
Effect of Drugs on Pulse in Heart Block. Strisower.—p. 269.
Scabies Norwegica. L. Kumer.—p. 271.
Periodicity in Gastric and Duodenal Ulcer. R. Fleckseder.—p. 272.

Zentralblatt für Chirurgie, Leipzig

Aug. 28, 1920, **47**, No. 35

Closure of Artificial Anus. Special Technic for Resection of Spur. V. von Hacker.—p. 1066.
*Celluloid in Operations on the Skull. A. Fraenkel.—p. 1072.
*Two-Stage Resection of the Stomach. J. Oehler.—p. 1076.

Use of Celluloid in Plastic Operations on the Skull.—Fraenkel states that his experiments have proved that celluloid implants to cover skull defects show no changes months after their application, nor do they cause any reaction in the neighboring tissues, provided they have been made to fit tightly in place. He mentions in particular two severe cases of cortical epilepsy in which the results were good seventeen and twenty-five years after operation. Cysts and scar tissue cannot form if the implant is not movable. He condemns as pernicious the modification recommended by some of making perforations in the celluloid plates, as this allows growth of scar tissue through the plate, and adhesions. Furthermore, the tissue growing through the plate softens and decomposes the celluloid. Hinterstoisser, who has had wide experience with the method, has never been compelled to remove from a skull defect a depressed celluloid plate. Failures are, however, sure to occur if plates are inserted before the pyogenous infection has completely subsided. The special field of application of this form of heteroplasty lies in traumatic epilepsy. The less the dura has been injured, the greater the tendency to spontaneous regeneration of bone to fill the gap.

Operative Treatment of Gastric Ulcer and Cancer.—Oehler endeavors, in carcinoma of the stomach, to make surgical intervention less dangerous by operating at two sittings whenever possible. In three recent cases of carcinoma of the pylorus region gastro-enterostomy was performed first and resection later, and he was surprised and delighted to see how easily the patients withstood the operation. The fact that they are already much weakened by their sufferings points conclusively to the two-stage operation if such is possible even for gastric ulcer.

Sept. 4, 1920, **47**, No. 36

*Hypertrophy of Mammary Gland After Prostatectomy. E. Kondoléon.—p. 1098.
Peculiar Gunshot Wound of Liver. Von Fink.—p. 1099.
*Operation for Gastroptosis. Vogel.—p. 1101.
*Dilatation of Esophageal Stricture. A. Schröder.—p. 1102.
"Effect of Anesthesia on Inflammations." F. Breslauer.—p. 1104.

Enlargement of the Mammary Gland After Prostatectomy.—Kondoléon reports two cases in which, following prostatectomy in old men (aged 70), some hypertrophy of the mammary gland took place. It remains for further clinical observation and experimental tests to determine whether there is an inner connection between the prostate and the mammary gland.

Operation for Gastroptosis Using Round Ligament of Liver.—Vogel describes his method of operation which resembles that of Perthes, an abstract of whose article appeared in THE JOURNAL, Sept. 25, 1920, p. 905. As compared with the Perthes method of suspending the stomach with the ligament, Vogel claims for his procedure that it provides a simpler way of fastening the ligament to the stomach, and thinks also that the results may possibly be more permanent.

Dilatation of Esophageal Stricture.—Schröder recommends the following procedure in treating difficult cases of stenosis. The patient swallows a silk thread tied to a shot; if the larger sizes of shot cannot be swallowed, smaller sizes must be tried. The silk thread is brought out through a gastrostomy opening, and two medium-sized catgut strings are wound around it, which is the distinguishing feature of the method. The silk thread, thus somewhat enlarged, is drawn through the stricture and left in place for twenty-four hours, during which time the catgut threads in the esophagus swell and thus widen the opening. For the next few days, another catgut thread is added every day, being twisted about the cord passing through the stricture, until it equals the size of a No. 18 sound (6 mm.). The further treatment is continued with sounds passed through the mouth. When the boy of 6, whose case is described in detail, was dismissed as cured, a No. 33 sound, 11 mm. in diameter, could be passed through the esophagus.

Zentralblatt für Gynäkologie, Leipzig

Aug. 28, 1920, **44**, No. 35

*Abdominal Diagnosis. J. Halban.—p. 969.
Multiple Myomas and Bilateral Tubal Tuberculosis with Ovum Embedded in Fimbrial Serosa. Schröder and Rau.—p. 972.
Case of Ileus in Childbed. P. Kreis.—p. 976.
Necrosis of Myosarcoma of Uterus Following Roentgen Irradiation. H. Hinterstoisser.—p. 977.

Diagnosis of Ascites.—Halban states that he has found it much easier to demonstrate the presence of small quantities of fluid in the abdomen when the patient is erect than when in a recumbent position, for in the latter position small quantities of fluid become distributed throughout the abdomen. In the erect posture, on the other hand, all the fluid in the abdomen flows downward, thus forming a single mass of fluid, the upper surface of which is horizontal and plainly demarcated.

Hyperalgesia of the Abdominal Wall.—Halban emphasizes that there may be hyperalgesic areas in the abdominal wall, especially in nervous women, without the slightest alterations in the internal organs. Severe pains in the abdominal wall often lead to the false assumption of inflammation of the adnexa or the appendix. Pinching folds of the skin on either side, comparing the findings, will usually differentiate hyperesthesia of the abdominal wall. To test the musculature he lays his hand lightly on the painful region with the patient in a recumbent position. Then the patient is requested to raise suddenly the upper part of the body. This causes contraction of the abdominal muscles. With the hand, pressure is now exerted on the contracted muscles, which elicits a sharp pain and makes it possible to decide whether the pain has its seat in the skin or in the musculature. If the patients can be assured that the pains are confined to the abdominal wall and that the internal organs are not affected, their mind is set at rest, and the condition can be combated by hydriatic measures and antineuralgics.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 25, 1920, **2,** No. 13

*Tetanus After Injury of the Eye. J. Van der Hoeve.—p. 1173.
*Artificial Paralysis of the Eye. G. F. Rochat.—p. 1177.
*Malaria Induced by Convalescent's Serum. H. Van Dijk.—p. 1181.
*Danger from Auscultation. G. A. Prins.—p. 1185.
Prosthesis for Radial Paralysis. I. Oljenick.—p. 1188.
Congenital Tumor on Sacrum. J. F. O. Huese.—p. 1191.

Tetanus After Accidents to the Eyes.—Van der Hoeve has encountered two cases of this kind. One proved fatal, but in the case of a small boy the outcome was favorable. In both the injury was from splinters of wood, and tetanus bacilli were found on the splinters, or tetanus toxin rapidly fatal for mice. Tetanus after injury of the eye has proved fatal in about 82 per cent. of the cases, according to Wagenmann's compilation of fifty and Gastelain's quite recent twenty-two cases. Metal splinters are less likely to entail tetanus than wood, as tetanus bacilli can retain their virulence on wood for years. One of the two cases reported is the more alarming as the wood splinter had made merely a slight superficial wound, involving only the conjunctiva and cornea. No case of tetanus after superficial injury from an iron splinter is known. Specialist examination at once in all accidents of the eyes is imperative when the practitioner is unable to investigate the wound thoroughly. In one of the cases reported, the practitioner had failed to discover the splinter of wood. Van der Hoeve emphasizes the necessity for preventive tetanus antiserum treatment whenever the orbit, eyeball or conjunctiva has been injured with wood.

Induced Paralysis of Ocular Muscles for Operations on the Eyes.—Rochat has been much pleased with the results when 1 c.c. of a 2 per cent. solution of procain with epinephrin is injected into the orbicularis. This relaxes the muscle and the eye keeps still, in marked contrast to the movements of the other eye.

Warning Against Malaria in Transfusions.—Van Dijk had an influenza patient develop typical malaria after she had been treated with serum from a convalescent from influenza. It was learned later that the apparently sound donor had been under treatment for recurring malaria a few months before. No parasites could be found in the donor's blood but the malaria plasmodium was cultivated from the blood of the patient injected. She had never presented any symptoms suggesting malaria before. The chill and fever developed the eighteenth day after the injection of serum, and returned every other day for nearly two weeks before they were arrested.

Danger of Auscultation.—Prins remarks that every one is trained to beware of percussion during hemoptysis, but he is convinced that the danger from light percussion is less than from the deep breathing, etc., required for auscultation.

Hospitalstidende, Copenhagen

Sept. 22, 1920, **63,** No. 38

Etiology of Scoliosis. P. Lorenzen.—p. 585.
*Injury of Brachial Plexus from Vertebra. A. V. Neel.—p. 591. Concl'n in No. 39, p. 601.

Symptoms Suggesting Cervical Ribs.—Neel reports five cases in which slowly progressing atrophy of the muscles of hand and forearm and neuralgic pains in the arm and a tender bony prominence in the supraclavicular fossa suggested injury from cervical ribs. In one of the cases the disturbances developed after a joint disease elsewhere. Instead of the expected cervical ribs, however, the roentgen ray revealed an abnormally large transverse process in the seventh cervical vertebra. This pressed on nerves and thus injured the brachial plexus. Under forced feeding to fatten somewhat, with local application of heat and electricity, the pains and paresthesia subsided and the muscles showed less atrophy in some of the cases; others were not modified by these measures. The patients were all women between 32 and 51, and operative treatment was advised for the younger woman. Some of the patients were under observation for a year or two, so that other causes for the disturbances could be excluded. He adds that the preferable technic for operating is the Streissler method, and he advises this without delay when the condition is diagnosed early in young working people.

Sept. 29, 1920, **63,** No. 39

*Pathogenesis of Bromid and Iodid Acne. H. Haxthausen.—p. 606. Concl'n in No. 40, p. 617.

Pathogenesis of Iodid and Bromid Acne.—Haxthausen's extensive research seems to indicate that it is not so much the reaction of the organism itself that is responsible for the acne as the chemical changes which the iodid and bromid undergo in the organism.

Oct. 6, 1920, **63,** No. 40

*Picrocarmin in Contrast Staining. V. Jensen.—p. 626.

Picrocarmin.—Jensen extols the fine differentiation obtained with the technic for contrast staining which he describes. The main feature is the combination of two other technics, using both a salt of picric acid and free picric acid with the carmin. This combination keeps perfectly for months and perhaps years. This stain is also preferable to use instead of the gram stain with the Claudius technic.

Svenska Läkaresällskapets Handlingar, Stockholm

Sept. 30, 1920, **46,** No. 3

Individual, Familial and Racial Predisposition to Tuberculosis. H. Lundborg.—p. 73.
Heredity of Deafmutism, and Mendel's Laws. H. Lundborg.—p. 88.
Peoples and Cultures by Light of Racial Biology. H. Lundborg.—p. 92.
Hydronephrosis Caused by Accessory Renal Vessels. G. Ekehorn.—p. 96.

Ugeskrift for Læger, Copenhagen

Sept. 23, 1920, **82,** No. 39

*Gonococcus Peritonitis. H. O. Wildenskov.—p. 1227.
Fungus Growth in Morphin Solutions. A. Norgaard.—p. 1235.

Sept. 30, 1920, **82,** No. 40

Case of Universal Interstitial Emphysema. E. E. Andersen.—p. 1251.

Gonococcus Peritonitis.—Wildenskov reports the eleventh case of gonococcus peritonitis at a Danish public hospital, all in women, and calls attention to the arrest of menstruation as an early symptom. Tenderness in both iliac fossae, early meteorism, and the lack of stiffening of the abdominal wall are also instructive in the diagnosis of the toxic form. The prognosis is favorable with this toxic form, and even with the infectious form it is more favorable than with peritonitis of other origin. The mortality was only 16.6 per cent. in the thirty-six operative cases on record. He adds, "Expectant treatment at first, but if conditions grow worse instead of better, operate at once."

Oct. 7, 1920, **82,** No. 41

Microscopic Findings in Mucosa During Phototherapy of Lupus. K. A. Heiberg and O. Strandberg.—p. 1281.
Scrap of Bacon Aspirated into Trachea. F. Jensen.—p. 1290.

Oct. 14, 1920, **82,** No. 42

*Tuberculous Meningitis in Adults. C. Holten.—p. 1307.
Chronic Cases in Public Hospital. K. H. Krabbe.—p. 1312.

Tuberculous Meningitis in Adults.—Holten was impressed with the great difference between the clinical picture of tuberculous meningitis in children and in adults as he studied the disease in thirty adults in an institution for the tuberculous. All ages were represented between 16 and 55.